CONCEPTS OF CONSCIOUSNESS IN THE PSYCHOLOGY AND PHILOSOPHY OF WILLIAM JAMES

CONCEPTS OF CONSCIOUSNESS IN THE PSYCHOLOGY AND PHILOSOPHY OF WILLIAM JAMES

by

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I hereby certify that this thesis contains no material which has been accepted for the award of any other degree or diploma in any university, and that, to the best of my knowledge and belief, the thesis contains no copy or paraphrase of material previously published or written by another person except when due reference is made in the text of the thesis.

For Brian, Laurel, and Thea.

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ABSTRACT

By the mid-nineteenth century, the empiricist tradition, in conjunction with physiological investigations into the nervous system, had culminated in a mechanical/elementaristic account of consciousness. Darwin's theory of evolution provided the catalyst for the explicit conclusion that man is a conscious automaton. William James enthusiastically accepted the new science but was unwilling to accept the automatist conception of mind. Instead, inspired by Renouvier's doctrine of free will, he set out to construct a naturalistic, evolutionary account of mind wherein consciousness was efficacious both in promoting man's survival and in making genuinely moral changes in the world. This thesis analyzes the major structures of James' psychological and philosophical theories and shows how, in the process of attempting to reconcile his conflicting commitments to Darwin and Renouvier, James transformed selected Darwinian postulates into epistemological constructs.

Developed along evolutionary lines, the efficacious, structurally unified stream of consciousness, described in The principles of psychology, was James' first major achievement. But having based his theory of consciousness on a mind/matter dualism, James was faced with the problem of how the mind knows the world, and the basic inconsistencies between Darwinian and Renouvian theory began to assert themselves in the form of a structure/function dichotomy. The dichotomy between the unified structure of consciousness and the two conflicting functions the mind fulfills is most obvious in the theory of volition, constructed to show how the mind acts upon, and thus knows the world. James' refutation of the theory of innervation and his conclusion that all knowledge is mediated through afferent sensations was a major advance,

providing the foundation for his evolutionary epistemology, pragmatism. James had originally interpreted the physical world in the mathematical/mechanical terms of Newtonian science: in pragmatism, he began to redefine the physical world in evolutionary terms. Plagued by the problems of the mind/matter dualism on which he had based his psychology, he constructed an evolutionary metaphysic--radical empiricism--wherein he abolished the ontological dualism between thoughts and things, claiming that the thought of an object and the object itself were one piece of pure experience taken in two different functional contexts. But if James' attempt to equate thoughts and things proved unsuccessful, he was nevertheless convinced that the physical world could be described in temporal/mutable terms. Furthermore, he demonstrated that any particular separations between mind and matter were not absolute, while simultaneously showing that some such cuts were a necessary condition for knowledge and action. Finally, there is evidence in his final philosophy that he was returning to the mind/matter dualism of the psychology, having abandoned the excesses of radical empiricism, to come to grips with the problem of reconstructing the now temporal/mutable universe in scientific terms.

PREFACE

Enough articles, books, and theses have been written on the psychology and philosophy of William James that an annotated bibliography of them would itself fill a good sized volume--and indeed, such a volume has also been written (Skrupskelis, 1977). The question may fairly be put, then, as to why another rather long work on the subject is necessary. The question has two answers, one completely positive and one rather negative, which complement each other.

First, the profusion of critical and analytic writings on James cannot be taken simply to indicate that an exhaustive treatment has been given to a limited subject. Instead, this profusion testifies to the continuing stimulation provided by James' writings in a variety of fields of psychology and philosophy. Wilshire's William James and phenomenology (1968) and the relevant parts of Ayer's The origins of pragmatism (1968), to cite but two examples, are not merely analyses of James' contributions to the two fields indicated by their titles. They are also serious attempts to go beyond James by expanding on his insights--to show how his problems and his attempts to resolve them can provide the basis for a comprehensive phenomenology and phenomenalism, respectively. The focus in these studies in short, is not just historical, but contemporary; James continues to have an influence.

Second, attention has not been focused equally on all of James' major contributions; his philosophical writings have been studied more extensively than his psychological ones, and when his psychological writings are analyzed, the analysis is often performed by philosophers who use the psychology (quite justifiably) to gain insight into the philosophy, but do not examine it from an essentially psychological perspective. Moreover, as White (1973a, pp. 31-40) and Kuklick (1977,

pp. 645-647) have complained, much of the treatment of James' thought has been casual and superficial, more a celebration of his open-mindedness, plurality of interests, etc., than a serious analysis.

The present thesis analyzes James' psychological and philosophical writings in a way that attempts to contribute to the first of these trends, and serve as something of a corrective to the second. It offers an analysis of the development of James' thought, from some of his earliest writings to his last work, Some problems of philosophy, and concentrates on the central problems he tried to resolve in his varied psychological and philosophical writings. The greatest emphasis is on the psychology; James' philosophical writings are therefore analyzed to illustrate the continuation and development of psychological constructs in his thought or to shed light on the meaning of certain psychological theories. That James' many works are best viewed as successive attempts to resolve a single set of problems is, indeed, the first major contention of this thesis. The second is that the details, often somewhat technical, of his early psychological theories provided the very specific bases for his later philosophical constructions. The third is that James' several attempts, and his successes and failures in them, provide insights into both the later development of psychology and the intractability of some of the problems themselves.

Throughout the thesis, the analysis is based both on a close reading of James' statements, and as far as possible, on the insights contained in the critical literature. However, because the type of analysis given here is unusual in focusing on a detailed comparison of James' theories with those current in pre-evolutionary and early post-evolutionary mental philosophy and psychology, it has been necessary to make a substantial number of original constructions and interpretations. The major original contributions are as follows:

Chap. 1 introduces the common assumptions model for interpreting theoretical developments and draws together the threads that make up a 'biological' theory of knowledge in writers just before James. The interpretation of the significance of the distinction between primary and secondary qualities is in part original. Chap. 2 offers a refutation of James' early theory of interests as a viable basis for the new psychology, and an assessment of its role in the development of James' thought. Chap. 3 discusses the stream of consciousness as an evolutionary construction. Chap. 4 introduces the hypothesis that James' theory of consciousness is based on a structure/function dichotomy, and that the development of his world-view can be studied in terms of an analysis of the progressivist/Newtonian versus the relativistic/evolutionary elements in his work at any given point. This latter hypothesis is supported by an investigation into the role of the distinction between primary and secondary qualities in James' theory of reality. Chap. 5 centres on James' refutation of the theory of innervation and his development of an afferent theory of knowledge. This interpretation is also applied to James' theory of volition with effort (Chap. 6), and it is subsequently demonstrated (through the use of the structure/function dichotomy model) that James constructed a functionally dualistic account of volition. This conclusion is also supported by an account of the two meanings of 'moral' in James' psychology and philosophy. Chap. 7 begins the analysis of James' philosophy: pragmatism is treated as an evolutionary epistemology, while Chap. 8 shows that radical empiricism can be treated as an evolutionary metaphysic. The philosophical theories were developed almost simultaneously and it is shown that they reflect the two strands of thought which emerged in The principles of psychology. The final philosophy is examined in Chap. 9 to show that James was returning to the earlier constructions

of the Principles in an attempt to lay the foundation for a new 'rationalization' of the physical world, now that he had largely succeeded in constructing a temporal/mutable universe. Finally, a retrospect in Chap. 9 makes use of the common assumptions model to show James' importance in the history of thought.

Two published articles by the author, in one case as junior author, summarize some parts of the analysis contained in this thesis. These articles are reproduced in an appendix.

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CHAPTER 1

INTRODUCTION

Introduction

James' Early Career

Born in 1842, William James began his scientific and philosophical career when the evolutionary debate was still raging.[1] Darwin's 1859 publication of The origin of species (Darwin, 1959/1977), forced science, theology and philosophy to examine the claims of the evolutionists because Darwin proposed a specific mechanism--natural selection (see Young, 1971, p. 445)--to account for species differentiation, and he included an overwhelming mass of specific biological evidence to back up his theory (see Burrow, 1968/1977, p. 11). It was this particular combination of the proposed mechanism and the empirical data that pushed evolutionary theory into the scientific limelight, and gained Darwin his enthusiastic converts (see Mackenzie, 1976, pp. 334-335). At the same time, Darwin's theory shook the theological complacency that the Age of Reason had foundered in, and brought scientific, theological, and philosophical interests into conflict.

The young James typified the reaction of many thinkers of the time. He accepted Darwinian theory: in 1868 he wrote from Dresden to his brother Henry: "The more I think of Darwin's ideas the more weighty do they appear to me, though of course my opinion is worth very little--still, I believe that that scoundrel Agassiz is unworthy either intellectually or morally for him to wipe his shoes on, and I find a certain pleasure in yielding to the feeling" (quoted in Perry, 1935/1974, 1, pp. 265-266). The impact of Darwin's

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1. In 1861 James entered the Lawrence Scientific School (see Perry, 1935/1974, 1, p. 463).

ideas remained with James throughout his life and in contrasting his work with that of Bergson, Perry comments:

> Both philosophers attached importance to biological evolution, but with differences. Bergson was more biological than James, and there would be a certain point in saying that James developed a biological psychology while Bergson developed a psychological biology. Furthermore, James's biology was profoundly Darwinian--stressing accidental origins, variations, adaptation, and survival (Perry, 1948, p. 340).

But if James' scientific bent guaranteed his enthusiasm for the new theory, his religious and philosophical yearnings tempered that enthusiasm. James rejected the overt Swedenborgianism of his father, Henry James Sr.;[2] he was too much a product of the scientific optimism of his age to do anything else (see Perry, 1935/1974, 1, pp. 151, 155, 465). Nevertheless, he retained a deep feeling for moral and theological questions,[3] eventually expressed in The varieties of religious experience (James, 1903), and the Essays on faith and morals (James, 1949),[4] and in his continuing acceptance of commitments to give public lectures at the expense of working out a scholarly systematization of his philosophy.[5]

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2. See the 1867 correspondence between William James and Henry James Sr. in Perry, 1935/1974, 2, pp. 705-716.

3. After the death of his father, James wrote: "For me, the humor, the good spirits, the humanity, the faith in the divine, and the sense of his right to have a say about the deepest reasons of the universe, are what will stay by me" (quoted in Perry, 1935/1974, 1, p. 152).

4. This volume is a collection of essays selected by Perry to demonstrate James' preoccupation with moral and ethical questions (see James, 1949, p. v).

5. See, for example, the letter from James to F.S.C. Schiller (in Perry, 1935/1974, 2, p. 583) in which he complained that his promise to deliver the Hibbert Lectures (which eventually appeared in print as A pluralistic universe, 1909) was preventing him yet again from tightening up his philosophical system.

In spite of Henry James Sr.'s unconventional views and his failure to win recognition as a philosopher or theologian, the James family occupied a respectable position in New England society. On Emerson's recommendation James Sr. became a member of the Saturday Club, a group which included most of the prominent thinkers, writers, and artists of the time (see Perry, 1935/1974, 1, p. 87). William James thus grew up in an atmosphere of philosophical debate and speculation. Furthermore, he was born at a time when philosophy was still a 'gentlemanly' occupation.[6] This cultural commitment to philosophy and the fact that philosophical discussions between the leading thinkers regularly took place in James' home had a profound influence on the young James. The goal of these philosophical discussions was largely practical; they centred around moral and religious concerns, and with the advent of Darwinian theory, debate on the meaning of scientific ideas and their meanings for philosophy was included.[7] Although James was to take many steps towards the 'professionalization' of philosophy, he retained throughout his life a deep personal commitment to philosophy,[8] and his contribution to the amplification of the new view of science was influenced by his back-

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6. See Kuklick, 1977, p. xviii and Chaps. 2 and 3. This period includes the 'Age of Emerson'; more importantly, it also includes the founding of the 'Metaphysical Club' where pragmatism was born. The seriousness of these societies and their importance in the development of American philosophy is described by Kuklick.

7. See Kuklick, 1977, p. xix and Chaps. 2 and 3 for descriptions of the problems discussed by these philosophical societies.

8. See Kuklick, 1977, pp. xxii, 79-242, 565. Kuklick demonstrates that James and many of his contemporaries stood half-way between the 'gentlemen' philosophers of Emerson's era and the professional, university affiliated philosophers of today (see also Perry, 1935/1974, 1, pp. 364, 377). James depended in part upon employment at Harvard and public lectures for his livelihood; he also made the distinction between his 'popular' or 'ministerial' philosophy (as Kuklick, 1977, p. 565, calls it), and his 'professional' work--that is, the philosophy he addressed to other professional philosophers.

ground of New England philosophy.

James' Problem

James' actual assumption of philosophy as a professional career came late in life. He began studies in chemistry in 1861 and in 1865, joined Agassiz's expedition to Brazil (see Perry, 1935/1974, 1, pp. 217-226). James' enthusiasm for the new science, combined with his disinclination for a career in medicine or business, had convinced him that his future might lie in the biological sciences.[9] But the Brazilian expedition convinced him that he was temperamentally unsuited to the scientific life,[10] and that his contribution to the extension and development of evolutionary theory was not to be in the natural sciences themselves. When James came home from the Amazon he resumed study at the Harvard medical school but his interests were already becoming firmly fixed in philosophy and psychology.[11] His period of depression which began in 1867 and lasted until 1870 was characterized not only by various physical ailments but by a kind of 'moral' despair as well. Trained for a medical or scientific career he had lost heart for it and found

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9. In 1863, James described his dilemma in a letter to his parents, and gave his reasons for deciding to join Agassiz's expedition (see Perry, 1935/1974, 1, pp. 215-216).

10. In 1865 James wrote to inform his parents that he had had enough of life as a biologist and would go on no more scientific expeditions: "If there is anything I hate it is collecting" (quoted in Perry, 1935/1974, 1, p. 223).

11. As early as 1875, while still on Agassiz's expedition James wrote to Henry James: "When I get home I'm going to study philosophy all my days" (H. James (Ed.), 1920/1969, 1, pp. 227-236; see also chap. XIII).

himself unable to work systematically towards such a career.[12]

While evolutionary theory proved itself tremendously exciting to James' scientific side, the physiological determinism that accompanied it made him feel that life in this new context had somehow become meaningless (see H. James (Ed.), 1920/1969, 1, pp. 152-153). For James and many of his contemporaries, the problem was to find a means of reconciling the traditional spiritual values that constituted such a major part of their heritage with Darwin's theory.[13] In his article "Darwin's metaphor: Does nature select?" R.M. Young expands on the problems confronting the nineteenth century thinkers and concludes that by 1871 the principle of evolution was accepted: critics still debated the "adequacy of natural selection and the application of evolution to man's mental nature" (Young, 1971, p. 498), but in general, the concept of evolution had carried the day. Darwin's mechanism, natural selection, which gave evolutionary theory a claim to scientific respectability and forced science and theology into a confrontation, itself ceased to be the central pillar upon which the theory continued to rest. As Young shows:

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12. James' crisis came to a head in 1869 in Cambridge where he had returned to complete his medical degree. His correspondence shows his total disinterest in medicine and science as possible careers, his concern with his health and his interest in philosophy (see Perry, 1935/1974, 1, pp. 233-234, 654, and chapter XVII).

13. New England philosophy traditionally concerned itself with practical, moral issues. Philosophy as it was actually still practised in the New England of the 1860's and 1870's, consisted in the debates of societies set up for the purpose of discussing selected problems. As Kuklick (1977, p. 47), demonstrates, these men were not professional philosophers although some of the members of the Metaphysical Club were later to become so. Thus, there was a strong tension between philosophy and science; the issues were felt to be of personal significance to the participants. The idea that philosophical conclusions were significant and personal, that they mattered, to James and his circle, is perhaps the most important cultural effect the New England tradition had on the philosophy that was to come.

> It is clear that Darwin's putative mechanism of natural selection suffered grievously for philosophical, theological, and scientific reasons--and often for all three --at the hands of the critics who combined their reservations and/or their enthusiasms. But, as they concentrated on skirmishes the main issue was settled. Putting the matter another way, Darwin's mechanism--in its nineteenth century context--turned out to be a very frail reed, but in bending with the winds it allowed his real commitment to the uniformity of nature to contribute to the general movement of nineteenth-century naturalism. If we notice the extent to which the special status of natural selection was weakened by scientists, theologians, and philosophers, Darwin's achievement turns out to be much more like that of Lyell and of the other evolutionists: together, by a rather confused mixture of metaphysical, methodological, and scientific arguments which depended heavily on analogical and metaphorical expressions, they brought the earth, life, and man into the domain of natural laws (Young, 1971, p. 500).

Evolutionary theory rapidly became the great nineteenth and twentieth century 'idea' or 'conception' of the natural world.

That evolutionary theory as Darwin presented it was problematic is important. James' period of indecision corresponds with the 'reworking' of Darwin's theory into an acceptable scientific model, so that science itself was in turmoil during this period. Darwin's mechanism acted as the 'catalyst' for the realignment of the sciences, but it was not accepted as the basis for the new science. Instead, the notion of natural selection made such an impact because of the particular stage science had reached by the time Darwin put forth his theory. In short, Darwin's theory seemed to confirm the tendencies of nineteenth century thought towards:

> a confident belief in the possibility of a rigorous and exact science of human nature, in which scientific methods would be as fruitful in the study of man as they had already been in the study of the physical world. Scientific method, that is, came to be held during this period as the key to learning everything about man--not merely everything there was to learn, but everything there was. And this implicit equation of everything there was to learn with everything there was at all marks the dimension of the change (Mackenzie, 1976, p. 331).

It was this optimism that caught James' imagination and at the same

time created the problem of where, in the midst of opportunities for scientific exploration, his energies could be best focused. But the theories of man that were being generated in the 1860's and 1870's were inevitably bound to be problematic for James, given his background, and this added another dimension to his difficulties.

By the mid-nineteenth century, theories of consciousness were already biologically based. The brain and nervous system were described by fairly rigorous physical laws so that to take its place in the biological scheme of things, consciousness had to be related to neurological processes. Philosophers, psychologists, and neurophysiologists began to theorize that the 'products' of consciousness were directly dependent on the underlying neurological workings of the brain and nervous system as these were understood according to the biological models of the time. The scientific method had long been successful in providing interpretation of the physical world through physics and chemistry. Biology had been steadily moving up to take its place beside the older sciences as a lawful and causal science and the acceptance of evolutionary theory confirmed and extended the role of biology in relation to the physical sciences. The first post-evolutionary conjecture about consciousness was the hypothesis that man is a conscious automaton. Automaton theory was a natural result of the new faith in biology: associationist theories of mind had already created a situation where consciousness was a fairly 'passive' process. Nothing could therefore be more natural than to make consciousness subservient to the underlying physical processes when biology was having such success in deriving laws for organic functioning in general. Consciousness in the automaton model is the result of brain cell interaction--it is a product--

thus it supervenes physiological functioning rather than intervening to produce behaviour on its own. In this way, evolutionary theory in the hands of James' senior contemporaries embraced a passive conception of mind in an otherwise active and adapting organism.

And originally James was inclined to go even further than the declared automatists in advancing the position. By 1869 his scientific studies had convinced him "that we are Nature through and through, that we are wholly conditioned, that not a wiggle of our will happens save as the result of physical laws" (quoted in H. James (Ed.), 1920/1969, 1, pp. 152-153). He planned at this time to write an attack on the automaton theory "showing how almost everyone who speculated about brain processes illicitly interpreted into his account of them links derived from the entirely heterogeneous universe of feeling" (James, 1890, 1, p. 130).

Of course, James never wrote the proposed paper. Instead, he wrestled with the problems as they had been framed in the discussions held by the Metaphysical Club:

> Although he never accepted the Nihilism which Chauncey Wright delighted to espouse to his young friends, James respected tight argumentation; and Wright's presentation made James confront the dilemma facing all nineteenth century intellectuals--if Darwinian science is true, how could he justify a spiritual orientation to life; if he accepted the scientific world view, how could he avoid a materialistic philosophy? These were serious questions: for James materialism meant determinism and determinism meant fatalism--he had no power over the course of his life and was, perhaps, destined to lead his aimless existence. But if this interpretation of Darwinian science was the final word, there was no great tragedy in personal failure because human existence had no meaning or significance (Kuklick, 1977, pp. 160-161).

While other scientists of the time were able to accept the type of determinism that seemed to follow on the heels of their scientific model, James was not. And this was his major problem: it delayed his selection of a career and it prevented him from working

productively on the studies he was engaged in at the time.

Immediate rescue for James came in the form of Charles Renouvier's demarcation of the role of belief in philosophical speculation, and his assertion of the validity of free will. But the problem of how consciousness efficaciously interacts with reality was to occupy James for the rest of his life. To understand the difficulties James laboured under in seeking a new structure and function for consciousness, and to understand his achievements and failures, it is necessary to focus for a while on the nineteenth century world view and its antecedent conditions.

When James declared his allegiance with the automaton theorists, he 'gave in' to the world view of the 1860's. His subsequent work can thus be viewed as a struggle to free himself of the bonds of this world view. More positively, James' work is an attempt to sketch a new framework for interpreting consciousness and its relationship with the external world. Therefore we shall leave James at this point for a while, unhappily committed to the conscious automaton position, and look at the conditions which gave rise to this particular view of mind in the first place.

The Rationalist-Empiricist Tradition: Galileo and the Primary and Secondary Qualities Distinction

The epistemological basis for modern psychology and for physics can be dated to Galileo's distinction between primary and secondary qualities, given in his polemical tract, Il saggiatore, in 1623. This was an epistemological distinction because it provided specific guidelines about what could actually be known about objects in the world. Objects were now seen as having particular qualities which inhered in the actual objects; these were the objectively measurable

properties such as shape, number, and motion, and were designated as the primary qualities. But objects appeared to have other properties as well--colour, odour, taste, etc.,--which were not measurable in physical terms; they were thus not considered to be properties of the object itself, but were said to be evoked in the mind of the observer by the object, and were then imposed back upon the object by the mind. Primary qualities resided in the object itself, while secondary qualities existed only in the mind that perceived the object.[14]

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14. The effects of the primary and secondary qualities distinction on science, philosophy, and psychology cannot be overstated and it is appropriate to include Galileo's statement of the doctrine as it appeared in Il saggiatore. He wrote:

> Now I say that whenever I conceive any material or corporeal substance, I immediately feel the need to think of it as bounded, and as having this or that shape; as being large or small in relation to other things, and in some specific place at any given time; as being in motion or at rest; as touching or not touching some other body; and as being one in number, or few, or many. From these conditions I cannot separate such a substance by any stretch of my imagination. But that it must be white or red, bitter or sweet, noisy or silent, and of sweet or foul odor, my mind does not feel compelled to bring in as necessary accompaniments. Without the senses as our guides, reason or imagination unaided would probably never arrive at qualities like these. Hence I think that tastes, odors, colors, and so on are no more than mere names so far as the object in which we place them is concerned, and that they reside only in the consciousness. Hence if the living creature were removed, all these qualities would be wiped away and annihilated. But since we have imposed upon them special names, distinct from those of the other and real qualities mentioned previously, we wish to believe that they really exist as actually different from those.
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> ...To excite in us tastes, odors, and sounds I believe that nothing is required in external bodies except shapes, numbers, and slow or rapid movements. I think that if ears, tongues, and noses were removed, shapes and numbers and motions would remain, but not odors or tastes or sounds. The latter, I believe, are nothing more than names when separated from living beings, just as tickling and titillation are nothing but names in the absence of such things as noses and armpits (quoted in Drake, 1957, pp. 274-277).

Galileo's role in the development of modern science and epistemology has been emphasized for several reasons. First, as will be shown below, the doctrine of primary and secondary qualities strongly

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Galileo made the distinction to facilitate his studies in physics: it provided an epistemological justification for reducing objects to those properties which could be treated mathematically and mechanically (see Mackenzie & Mackenzie, 1974, pp. 335-336), and for eliminating from the real world those properties which depended upon an observer for their existence. Galileo's rationale for making a clear distinction between the properties that objects exhibit in the absence of an observer, and those which are products of the interaction between object and observer, had its roots in Renaissance Neo-Platonist philosophy, which was not in itself concerned with the development of an empirical science. It was therefore Galileo's primary and secondary qualities distinction that gave science its independence from scholastic philosophy (see Thayer, 1968, p. 20), and ushered in the modern age. Science prospered as a result of Galileo's pragmatic distinction and the growing independence of an empirical technological science from mediaeval philosophy ensured that the distinction between primary and secondary qualities would find its way into philosophy where it would provide the basis for a new conception of the mind and its relation

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14 (contd.) influenced James' conception of the 'worlds of reality' in the Principles. Second, while Newton provided a systematic description of the laws which appear to govern natural phenomena, so that it was the Newtonian, rather than the Galilean model of the physical world that James inherited, Newton himself was an empiricist in his epistemology and thus inherited the problems implicitly contained in the Galilean model (see Thayer, 1968, pp. 24-25). Finally, the epistemological tradition, as it was established by Descartes, Hobbes, Locke and their contemporaries used the distinction as a starting-point in their efforts to determine how the mind 'knows' the world.

to the world.[15] Thus, in 1690, Locke incorporated the primary and secondary qualities distinction into his epistemological treatise An essay concerning human understanding (see Locke, 1690/1964, Bk, 2, VIII, 9-15, pp. 112-114).

But if Galileo's distinction facilitated the growth of the physical sciences,[16] philosophers found the distinction more problematic. Basically, as Thayer writes: "The general problem is this: if the 'objective' world of bodies and the 'subjective' realm of mind and ideas are of a radically different character, how does the knowing mind, or how do ideas, ever give us reliable information about bodies?"[17] The problem was epistemological: philosophy's

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15. See Mackenzie and Mackenzie, 1974, pp. 331-332, 335-336. It should be noted that Galileo's doctrine provided the catalyst for the reassessment of man's epistemological relationship with reality, as such a reassessment was implicitly demanded and partially developed by the Renaissance philosophers, notably Nicolas of Cusa, Marsilio Ficino, Pico della Mirandola and Giordano Bruno. For discussions of the role of Platonism and its relationship to the scientific revolution, see Cassirer, 1963; Cassirer, 1942, pp. 123-144, 319-346; Kristeller, 1943; Kristeller, 1944, pp. 220-226; Yates, 1966; and Yates, 1969.

16. The success of Galileo's distinction as a means of understanding the physical world was assured in 1687 with the publication of Newton's Principia, wherein Newton formalized some of Galileo's definitions of the primary qualities in his concepts of motion (see Koyré, 1965, pp. 9-10).

17. (Thayer, 1968, p. 20). Beyond this more explicit problem, philosophers had to look for a new assessment of man's very place in nature. Koyre describes the dilemma as follows:

> I have been saying that modern science broke down the barriers that separated the heavens and the earth, and that it united and unified the universe. And that is true. But, as I have said, too, it did this by substituting for our world of quality and sense perception, the world in which we live, and love and die, another world--the world of quantity, or reified geometry, a world in which, although there is a place for everything, there is no place for man. Thus, the world of science--the real world--became estranged and utterly divorced from the world of life, which science has been unable to explain--not even explain away by calling it "subjective" (Koyré, 1968, p. 23).

The point is that man has become an 'observer of' rather than a 'participant in' the natural world. Given this reinterpretation of man's relational status to the rest of nature, it was a logical move

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task became the exploration of the relationship between the 'knower' or 'observer' and what comes to be, and can be known.

One of the most important results of the Renaissance and the Scientific Revolution was the birth of the idea among scientists and philosophers that man was capable of understanding the workings of nature and discovering the universal laws that governed the system.[18] Epistemology supported and expanded this search--knowledge about the mental processes that enabled man to make certain deductions about the physical world supported the developing scientific system. Knowledge was to be gained through reasoning and observation, but both of these means were defined by the scientific doctrines and methodologies of the time. Newton's Principia convinced his contemporaries and those who followed of the efficacy of the new approach to knowledge. The obvious task for philosophers was to make epistemological enquiries into how the mind achieved this particular kind of knowledge.[19] While

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17. (contd.) for philosophy to turn to epistemological matters such as the limitations of perception and sensation in providing accurate knowledge about the world, and to objectify the study of consciousness along the lines Galileo's primary and secondary qualities distinction suggested.

18. For a contrast of mediaeval and modern views of man's relationship with the cosmos, see Koyré, 1968, pp. 1, 58, 90; Kuhn, 1959, p. 106; and Cassirer, 1963, pp. 53-55.

19. Newton's Principia acted as a confirmation of the efficacy of the new approach to knowledge. Mathematics, mechanics, and observation were confirmed as the means of revealing the secrets of the universe, and scientists and philosophers firmly believed that Newton had discovered the universal laws that described natural events. Descartes had previously established that epistemological enquiries must constitute the basis for philosophical speculation, and this had a tremendous effect on the empiricist philosophers who followed him (see Williams, 1967, p. 354). If man had the capacity to understand the lawful workings of the universe, as the Principia appeared to confirm, then the means by which he derived its workings were of paramount importance. Newton's Principia, then, served as confirmation that Descartes had taken the correct approach to philosophy. For the effect of Newton's Principia on the scientific community, see Koyré, 1965, pp. 3-24, and for Descartes' epistemological starting point, see Descartes, 1637/1964, pp. 50-67, and Descartes, 1641/1970, pp. 134-143.

philosophers had always studied the mind's relationship to the external world, that relationship was completely redefined during the scientific revolution. Traditionally, the scope of science had been limited to the possibilities for exploration within pre-existing metaphysical and epistemological systems; after Galileo and Newton, the reverse was true. Now the progress of science determined the questions which must be asked about mind. The traditional relationship between metaphysics and epistemology was replaced by a new relationship between science and epistemology while metaphysics occupied the limited and subordinate place formerly reserved for science. Mathematics and mechanics had replaced the scholastic methods for obtaining knowledge about the workings of the cosmos--science, and not metaphysics, became the key to complete knowledge about the world, and scientific knowledge became the 'indispensible' knowledge of the new era. Science, through the means of the primary and secondary qualities doctrine, took over from traditional metaphysics in defining what is real (see Mackenzie & Mackenzie, 1974, p. 332). This does not mean that metaphysical questions were no longer asked. They were. But they were posed from the standpoint of the mechanical and mathematical advances that had been made in science, and took, as their starting point, the laws and forces that appeared to govern the rest of nature.

The primary and secondary qualities doctrine had the effect of dividing perceptual and sensational experience into two categories which were not reconcilable within experience itself. At the same time, it appeared to cut through the dilemma that had troubled epistemologists from the time of Aristotle because it provided a method of determining which types of perceptions yielded 'real' or

'true' knowledge about objects and which did not. Perceptions of the primary qualities yielded 'real' knowledge while perceptions of the secondary qualities did not. This appeared to provide positive guidelines for the new epistemologists; through the application of mechanical and mathematical principles, the mind itself could be studied as a 'natural object' and its workings could be defined within the context of the systems describing the rest of nature (see Mackenzie & Mackenzie, 1974, p. 332). Descartes' Discourse on method of rightly conducting the reason (1637), Locke's Essay on human understanding (1690), Berkeley's Principles of human knowledge (1710), and Hume's Enquiry into human understanding (1748), were all largely studies of how the mind attains knowledge and how secure that knowledge is. The focus of philosophic interest gradually narrowed so that the study of mind became explicitly psychological, and thus more explicitly 'scientific'. The works of Hartley, and the Mills,[20] are almost exclusively analyses of how ideas are built up into ever more complex and inclusive ideas. Modern psychology therefore has its beginnings in the epistemological philosophy that grew out of the scientific revolution.

Within this epistemological tradition, two main conceptions

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20. Hartley, as Boring (1950, pp. 195-7), and Peters (1962, p. 437), show, developed his physiological psychology of sensation as an extension of Newton's Principia. While Boring and Peters characterize Hartley as a physiological psychologist, his work still fits into the epistemological tradition because the nature of each association depends upon the character of the nervous 'vibrations' which immediately precede it (see Peters, 1962, p. 441). The associationism of James Mill, based on a theory of mental mechanics, and John Stuart Mill's insistence on mental chemistry as the basis of the associations (see Boring, 1950, pp. 219-223), extend the epistemological concerns of philosophy into physiological models. That is, Hartley and the Mills brought the epistemological questions of philosophy into the domains of the physical sciences themselves, so that the question of how the mind knows what it knows and what exactly it is that it knows were now to be answered empirically.

of mind vied for supremacy and served as foci for disagreement. These were the Cartesian rationalist, and Lockean empiricist, traditions.

Distinctions Between the Rationalist and Empiricist Traditions

It is somewhat misleading to speak of rationalist and empiricist traditions as the philosophers involved were of such stature and individuality as to make categorization almost meaningless. However, the distinction is made in order to classify the solutions these philosophers developed to answer the epistemological puzzle of how the mind knows the world that is perceived. If all knowledge comes from the senses (as the empiricists maintained), then it is difficult to understand how man can have knowledge of anything which is not directly mediated through sensory experience. Knowledge of God, and the ability to derive the laws of nature in mathematical and mechanical terms are not obvious outcomes of perceptual experience. But if the mind contains certain innate ideas or predispositions which supersede and interpret perceptions (as the rationalist maintained), these ideas should lend themselves to classification; at least their existence as specific ideas or tendencies should be verifiable and this had not been the case.[21] This gave the empiricists a case for replacing the 'innate ideas' hypothesis with a 'tabula rasa' conception of the mind.

The question of whether sensory and perceptual experience was sufficient for the development of all knowledge, or whether the mind

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21. See Nelson, 1967, pp. 196-197. The problem of innate ideas has never been satisfactorily resolved in psychology or philosophy, and as will be seen below, was one of the major difficulties James encountered in setting up his pragmatic methodology and his radical empiricist philosophy of experience.

contained certain innate ideas or predispositions gave rise to two sophisticated schools of thought: broadly speaking, the rationalists maintained that some knowledge was innate, while the empiricists contended that all knowledge was derived from experience. The leading figure of the Rationalist tradition was Descartes whose introspections led him to affirm that notions of God and self were innate,[22] and later to include mathematical postulates and the apprehension of such primary qualities as time, space, and motion (see Peters, 1962, p. 366). Leibnitz concurred by concluding that ideas in consciousness were known consciously only when the mind was "provoked by experience to reflect upon the necessary principles underlying the sensible world".[23] Malebranche made a more radical separation between the mind and the world. He insisted that all we know are ideas, and that these ideas are not dependent upon physical things (see Malebranche, 1688/1923, pp. 75, 83, 210). Unlike Spinoza, however, Malebranche insisted that God exists separately from our ideas, and our knowledge of God comes as a result of his revelations to us (see Malebranche, 1688/1923, pp. 165, 210-212; see also Peters, 1962, p. 391). Gassendi took a fairly moderate position, claiming that all knowledge comes from sensory experience, but ideas are derived from sensory experience by a higher mental faculty (see Peters, 1962, p. 377).

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22. See Peters, 1962, pp. 365-366. Descartes vacillated between affirming the existence of distinct innate ideas and the more moderate position that by innate ideas, he meant only that mind had the potential for thought. Peters accepts the latter statement as Descartes' final conclusion and emphasizes Descartes' firm anti-materialism in regard to the structure and function of the mind.

23. Magill, 1968, p. 519. See also Leibnitz, 1765/1934, pp. 141-148. Leibnitz was replying to Locke's criticism of Descartes. Locke argued against the existence of innate ideas on the basis that children and savages do not have them nor are the ideas used in ordinary reasoning (see Locke, 1690/1964, Bk. 1, II, 1-27, pp. 67-76).

Malebranche, by contrast, developed a rigid psycho-physical parallelism wherein the translation of sensory images into ideas depended on God's and man's wills working together (see Malebranche, 1688/1923, pp. 168-172).

The rationalist contention that mind and body were substantially distinct is consistent with their conception of the mind as a single, undivided entity (see Boring, 1950, p. 168; Boring ascribes this conception of mind to Descartes and Leibnitz), so that their conception that understanding and thinking were irreducible to the more basic psychological processes, rests upon a radical mind-body dualism. This does not mean that knowledge was not derived from the senses: the rationalists all agreed that experience was a necessary precursor of at least some types of thinking. The degree to which experience was perceived as necessary for knowledge varied among philosophers. It does mean though, that the rationalists made a 'substantial' distinction between thought and perception: thoughts were not simply the summation of sensory experiences but were qualitatively distinct from such experiences (see Peters, 1962, pp. 367, 377, 388, 389, 410; see also Boring, 1950, p. 163). The rationalist mehtod for getting at the basis of consciousness was introspective: it involved the discovery of irreducible ideas in consciousness in order to arrive at the thinking self.

The empiricist position was essentially the opposite; the empiricist philosophers proclaimed that all knowledge was derived from experience. Hobbes was perhaps the first 'modern' empiricist to argue that all knowledge comes from the senses.[24] Locke began

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24. Hobbes first maintained that all knowledge comes from the senses in De corpore, writing:

> So that if the appearances be the principles by which we know all other things, we must needs acknowledge sense to be the principle by which we know those principles, and that all the knowledge we have is derived from it (Hobbes, 1655/1962, 1, p. 389).

his Essay by declaring that there are no innate principles in the mind (see Locke, 1690/1964, Bk. 1, 11, 1-5, pp. 67-68), and went on to write that experience contains all the material necessary for reason and knowledge (see Lock, 1690/1964, Bk. 2, 1, 1-2, p. 89). Berkeley's empiricism was opposed to Locke's--he insisted that objects must be perceived or perceiving if they are to be credited with existence (see Acton, 1967, p. 296), and he argued against Locke's ratification of the primary and secondary qualities doctrine, stating that nothing can possess primary qualities without possessing secondary qualities at the same time (see Berkeley, 1709/1843, CXXII-CXXIII, pp. 278-279, CXXX, p. 281). Sensible qualities exist only in the mind. At the same time, nothing like them can exist outside the mind (see Berkeley, 1713/1843, pp. 156-161, and 1710/1843, XXVIII-XLI, pp. 100-101). But if Berkeley hereby established himself as an idealist, his idealism rested on empiricist principles. He took exception to the innate ideas hypothesis of Descartes (see Acton, 1967, p. 297), and argued that the relations between the senses were sufficient to produce ideas (see Berkeley, 1709/1843, CLVI-CLX, pp. 290-291). Hume was a strict empiricist, believing that not only were all of our ideas derived from sensory experience, but that it was impossible to have ideas that were different from the totality of experience (see Hume, 1739/1962, pp. 176-181; see also MacNabb, 1967, p. 76).

Mind, for the empiricists, was a composite of large numbers of sensations and ideas. The sensations and ideas were derived from individual experience and combined through the compounding of simple ideas into complex ideas. Understanding and thinking were reducible to these ideas and their compounding with one another. Locke introduced the idea of association as a principle to account for the

adventitious connections between experiences (see Locke, 1690/1964, Bk. 2, XXXIII, 1-19, pp. 250-255), while Berkeley, and Hume in particular, extended the concept (see Hume, 1748/1962, pp. 38-46; see also Acton, 1967, p. 297; and Boring, 1950, p. 193). But it was Hartley who developed the principle of association into a systematic doctrine (see Boring, 1950, p. 193). Now the empiricists had a psychological model to work on, and philosophy began to be more specifically 'psychological' (see Boring, 1950, p. 219). Finally, associationism came into its own in the works of James and John Stuart Mill (see Peters, 1962, pp. 450, 451, 462; see also Boring, 1950, pp. 223-224, 228-231).

Common Assumptions of the Rationalists and the Empiricists

The constructions of the rationalists and the empiricists--that is to say, those areas wherein their theories showed agreement--can be summarized under the headings of 'common assumptions'. To qualify as a common assumption in this context, a statement must generally describe a universal idea about the nature of reality. For example, while the scholastics had various 'mechanical' ideas about the perceptual faculties, these were not connected with their view of the cosmos as the mechanical analogies used during the period after the Scientific Revolution were. In the first case, the mechanical approach to perception simply constituted a descriptive process. In the second case, it connected man to a mechanically described natural world, epistemologically and ontologically, and was thus a fundamental part of the world view.

If the rationalists and the empiricists were divived on the question of the genesis of knowledge, they were united in a set of common, significant assumptions about the nature of the physical world and about some of the means of characterizing the structure and

function of mind in relation to that world. These common assumptions defined the parameters of mental philosophy and described the correspondence between mental philosophy and the physical sciences. They continued, in conjunction with the common assumptions about the nature of the physical world, to constitute a definable world view until the aftermath of the evolutionary debates challenged their efficacy as descriptive postulates. Their incompatibility with evolutionary theory seems obvious to us now, because they were challenged, modified, or translated into concepts with new implications, or replaced by new constructs during the period of intellectual ferment of the late nineteenth century. Until that time, the common assumptions of physics and mental philosophy described what is commonly called the Newtonian world-view.

These assumptions were generated out of the scientific tradition and made explicit within mental philosophy. Newton's characterization of the physical world thus had a direct effect on philosophy. In Newton's view according to Burtt:

> the world of matter was a world possessing mathematical characteristics fundamentally. It was composed ultimately of absolutely hard, indestructable particles, equipped with the same characteristics which had now become familiar under the head of primary qualities, with the exception that Newton's discovery and exact definition of a new exact-mathematical quality of bodies, the vis inertiae, induced him to join it to the list. All changes in nature are to be regarded as separations, associations, and motions of these permanent atoms.
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> At the same time it must be acknowledged that Newton's strong empiricism tended continually to tame and qualify his mathematical interpretation of the atomic theory. The atoms are predominantly mathematical, but they are also nothing but smaller elements of sensibly experienced objects (Burtt, 1932, p. 228).

The success of science in describing nature in mechanical-mathematical terms had far-reaching effects for the philosophy of mind. Sensation, perception, and movement were described in terms of

mechanical analogies. That these mentalistic factors could be so described became one of the common assumptions of mental philosophy. Correspondingly, mechanical analogies of mind were couched in elementaristic or atomistic terms, and the ideas that were constructed out of the mechanical-atomistic paradigm were necessarily artificial units, more akin to Newton's descriptions of the physical world than to man's actual experiences in the world. The crucial exception to this statement is of course the Cartesian reservation of certain faculties, which constituted the unitary mind, and were considered to exist 'outside' the reach of the scientific analogy. Nevertheless, the Cartesians did use the mechanical-atomistic analogy to describe many mental events, including perception and emotion. Descartes explicitly regarded the body as a machine which could be studied scientifically (see Peters, 1962, pp. 360-361). Gassendi made a separation between body and soul and used the laws of motion to explain sensations; he also followed Aristotle's biological model of consciousness (see Peters, 1962, pp. 377-378). Leibnitz theorized that the body was governed by the laws of motion (see Russell, 1967, p. 428).

The empiricist philosophers took their start from science as well. Hobbes (see Peters, 1962, p. 381), excited by Galileo's laws of motion, described all aspects of human activity in terms of irreducible motions (see Hobbes, 1651/1962, III, p. ix; I, 21 IV, p. 38). Thus "desires and aversions are motions toward and motions away from objects" (Peters, 1962, p. 381). Locke, too, described sensation as the movement of animal spirits (see Peters, 1962, p. 42; see also Locke, 1690/1964, Bk 2, VIII, 12, p. 113) and Hartley's theory of vibrations, in concert with his laws of association, linked

sensory and mental events (see Peters, 1962, pp. 437-439). The 'mental mixtures' of James Mill and John Stuart Mill's 'mental chemistry' (see Boring, 1950, p. 229), are perhaps the two most radical theories to develop from the position that mental phenomena could be described mechanically.

The corresponding tendency towards atomism--that is, the tendency to reduce mental phenomena to their smallest particles or components reached its climax in the works of the Mills (see Boring, 1950, pp. 226, 230), but it had its beginning in Descartes' theory of the 'animal spirits'--minute particles which were ultimately responsible for bodily movement.[25] Malebranche (see Peters, 1962, p. 390), accepted the doctrine of animal spirits and Hobbes contributed to the reductionist conception of mind by connecting sensory objects and the brain through a series of infinitely small motions (see Peters, 1962, p. 382). Leibnitz's monadology (see Peters, 1962, p. 410), is an extreme example of reductionism even though Leibnitz intended it to provide the unifying principles for the cosmos. Locke subscribed to Descartes' notion of the animal spirits (see Peters, 1962, p. 421), and used the primary and secondary qualities doctrine to break sensations into their components (see Peters, 1962, p. 421). Hume's division of mind into simple and complex ideas is consistent with Locke's and Berkeley's division of mind into components derived from experience (see Hume, 1739/1962, p. 177). Simple ideas were indivisible, while complex ideas could be broken down into simple ideas. Finally, Hartley propounded a complex theory of physical

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25. See Peters, 1962, p. 361. While the rationalists and empiricists disagreed on the range of mental phenomena which could be treated mechanically and elementaristically, they agreed that sensation and perception could both be treated accordingly.

vibrations and a corresponding mental associationism to describe mental processes (see Peters, 1962, pp. 437-441).

In all of these theories, the 'ideas' which formed the basic units of cognition were in a sense artificial. Highly abstracted from experience, they made only tenuous contact with activities from daily life. The conceptions generated out of them had to be painstakingly constructed; in this they paralleled the atomistic units of the physical sciences (see, for example, Locke, 1690/1964, Bk. II).

Rationalists and empiricists alike made a clear distinction between human and animal minds. Descartes described animals as possessing bodies alone (see Peters, 1962, pp. 372-373), and Gassendi concurred (see Peters, 1962, p. 373). Locke allowed that animals exhibited perception but added that their powers of perception were inferior to man's (see Peters, 1962, p. 377). Hume went further, giving animals some powers of inference, but he denied that they were capable of 'argument' or 'reasoning' (see Hume, 1748/1962, p. 112).

The empiricists and rationalists described a kind of 'generalized' or 'universal' individual--that is, they studied how a non-specified individual obtained knowledge and then generalized to the rest of mankind.[26] Social interaction was not conceived as part of the essential conception of man so that the individual could be described apart from the social environment.[27] Both assumed that

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26. See Peters, 1962, p. 409. Peters says that Leibnitz's monadology is individualistic because the monad is the microcosm reflecting the macrocosm. Further, the soul is the centre or heart of the cosmos, and therefore, he says, psychology is the key to the universe. The idea of one universal figure representing all of mankind is quite vividly demonstrated here in Peters' comments on Leibnitz' work.

27. See Peters, 1962, p. 385. Hobbes came closer than any of his contemporaries to formulating a social psychology, as he was concerned with the relationship between individuals and society.

apart from accidental variation, all men were the same and thus there was no emphasis on individual differences.

Like individual differences--Locke's notion of association by chance or custom was considered important as a process to account for how individuals made mistakes--the processes of how the emotions were generated were considered important. But in comparison to the vast amount of effort spent in constructing the processes by which ideas come to be associated, little was done with them. The roots of emotion and motivation--pleasure and pain--were conceived of as primitive constituents of experience which entered into associative linkages with ideas. The mechanism of motivation was therefore the same as the mechanism for thought, and this mode of treating motivation can be found consistently in the works of empiricist philosophers from Hobbes and Locke through to Bain (see Hobbes, 1651/1962, 3, pp. 40-43; Peters, 1962, pp. 421, 433, and Bain, 1875/1888, pp. 9-13). The rationalists were even less interested in the passions per se, placing more emphasis on purely epistemological concerns. Thus, the two traditions combined in the assumption that the means of describing how man came to know the world, through reason of ideation, was the primary task of mental philosophy. Finally (as Smith emphasizes), epistemological methods were introspective rather than experimental or empirical, and it was assumed by rationalists and empiricists alike that introspection was the proper method of studying the mental processes (see Smith, 1970, pp. 20-21).

Problems within the Rationalist-Empiricist Tradition, and the Changes in Meaning in the Common Assumptions

By the middle of the nineteenth century the empiricist tradition had culminated in the great system of associationism constructed by

Locke, Hartley, Hume and the Mills. Mental philosophers were now equipped with a set of laws to describe mental processes and these laws were correlated with the lawful description of the physical world.

But all along, there were problems; from the time of Galileo, philosophers had struggled to overcome major difficulties in constructing an epistemology correlated with the picture of the physical world. The rationalist position was becoming more and more problematic because its proponents could not substantiate the hypothesis of innate ideas which was based on an ontological mind-matter dualism. In Britain, the growing demand by scientists for uniformity in nature was coming into severe conflict with the Cartesian structure of the cosmos. Correspondingly, the empiricists had difficulties with their contention that all knowledge was derived from sense experience (see Thayer, 1968, pp. 23-24). If all knowledge was derived from sensory experience, how were they to account for knowledge where the sensory base seemed inadequate--for example, abstract mathematical relations? And both traditions had to deal with the distinction between primary and secondary qualities. Formulated by Galileo and ratified by Newton, it facilitated the progress of science but it left human experience with a totally unreliable status. Man was both creator of the universe--in the sense of discovering its hidden properties--and the by-product of his own creation. And by the middle of the nineteenth century, man's place in the universe was as problematic as it had been in the early seventeenth-century (see Koyré, 1965, pp. 22-23).

Science and philosophy are not 'static' disciplines; in the period under review, at least, they progressed rapidly. And as they progress, their common unifying assumptions may undergo subtle changes

in meaning; these changes can facilitate the progress or development of the discipline without forcing an explicit paradigm shift within the discipline. Newtonian science went through various developmental stages, so that mid-nineteenth century science had little in common with the science of Galileo and Newton either in its methodology or in its content. Mental philosophy equally exhibited congruent development in terms of the common assumptions described above until the mid-nineteenth century, when a new crisis point was reached. This crisis came about as a result of the development of neurophysiological research into the workings of the nervous system. The two streams which defined the Newtonian world--science and mental philosophy--could no longer continue to exist as interactive but nevertheless ontologically separate strands of the world view. They now had empirically based implications for one another which could not be ignored. The common assumptions of mental philosophy therefore subtly changed throughout the nineteenth century as a result of being linked with experimental, largely physiological, investigations of the brain and nervous system.

Therefore, while the earliest attempts to incorporate evolutionary theory into an integrated view of man and nature display substantial continuity with earlier speculations, they also display considerable modifications of these. Automaton theory was the earliest attempt at a reformulation of the relationship between man and nature in evolutionary terms. While ostensibly based on evolutionary theory, it actually owed little to it except a ratification of naturalistic and materialistic tenets of thought, and a rationale for expanding these into a general theory. The remainder of this introduction will present the views of the automaton theorists and their immediate predecessors and show how they represent the interaction between

philosophical speculation and nineteenth century physiology, generalized by means of evolutionary theory to provide expectations of an integrated world-picture. The major emphasis will be on showing how tenets of the philosophical tradition, while not rejected, had their meanings changed by their application to experimental data.

The Development of Neurophysiological Models

The essential difference between the works of Hartley and the Mills and the works of Bain, Lewes, Carpenter, and Spencer is the importance the latter group placed on empirical observations about how the brain and nervous system actually function. Bain's work in particular, marks a pivotal point in the history of epistemological speculation, for it was Bain who recognized the importance of linking empirical studies in physiology to the laws of association as they had been generated by the mental philosophers--notably Hume, Hartley, and the Mills. In 1851, Bain wrote to John Stuart Mill: "There is nothing I wish more than so to unite psychology and physiology that physiologists may be made to appreciate the true ends and drift of their researches into the nervous system" (Bain, quoted in Young, 1970, p. 103). At the same time Bain recognized the importance of physiological studies for psychology:

> Before 1855 Bain had shaped his philosophy of the mind. Empiricism was the fundamental characteristic; induction was the logical principle; the study of the body was to precede that of the mind, and the accumulation of physiological data was to be the beginning of wisdom (Peters, 1962, p. 457).

To understand Bain's accomplishment it is first necessary to look at the achievements and theories of nineteenth century physiology. Physiological research in the nineteenth century was dominated by the sensory-motor model (see Boring, 1950, pp. 72-80; Young, 1970, pp.

79, 197-223, and Peters, 1962, pp. 625-626). Just how closely the sensory-motor view of the physiologists correlated with the rationalist-empiricist tradition is evident in the break physiologists first made between sensory-motor activity and the functions of the cerebral centres. Flourens, a confirmed Cartesian working in the 1820's claimed that the spinal cord and lower brain centres controlled muscular movement while the higher brain centres acted as the seat of perception, reasoning, and will. The will, therefore, did not directly cause movements but it did provoke them (see Young, 1970, pp. 67, 72-73).

Magendie retained the separation of 'higher' and 'lower' nervous systems but asserted that "will is a cerebral action which causes motion" (Young, 1970, p. 87). Magendie took his model from the sensationalism of Condillac, translating the doctrine into physiological terms so that he "considers mental phenomena to be functions of the brain and argues that their study is, like the study of any other organ, part of physiology" (Young, 1970, p. 83). In this way Magendie intended to bring the higher mental processes into science as objects available for study.

But what was the nature of the mental processes that Magendie hoped to treat as natural objects? Young gives us the answer:

> The functions which he investigates and which he attempts to relate to the nervous system are the traditional normative categories of philosophical analysis: sensibility, memory, judgement, and desire or will. He makes no attempt to consider whether or not these categories are adequate for the explanation of experience and behaviour. While he considers thought a function of the brain, he does not enquire into the functional role of thought in the lives of organisms. Thus, in practice, his psychology had stronger links with metaphysics than with biology (Young, 1970, pp. 83-84).

Specifically, Magendie based his purportedly physiological analysis

of mental processes on Destutt de Tracy's 'ideology'--the analysis of ideas into their sensory bases--which was in turn an extension of Condillac's sensationist empiricism. Magendie's unquestioning acceptance of the concepts of mind generated by philosophical speculation, which had arisen in the first place from the epistemological difficulties engendered by the scientific revolution, was typical of the physiology of the time. This acceptance of philosophical assumptions about the nature of mind characterized most of early nineteenth century psychology and physiology.

Mueller also made use of the sensory-motor distinction, maintaining that sensory impressions are translated into ideas in the cerebral hemispheres which also direct the mind towards selected sensory impressions (see Mueller, quoted in Young, 1970, p. 91). It took the discoveries of Fritsch and Hitzig in 1870, and Ferrier in 1873, of motor areas in the cerebral cortex,to force recognition of the fact that the higher brain centres had a role to play in the elicitation of movement (see Young, 1970, p. 109, Hearnshaw, 1964, p. 73).

In the early decades of the nineteenth century, physiologists set out to verify selected abstracted philosophical assumptions. They were successful enough in translating these assumptions into phsyiological terms so that by the middle of the century, Bain felt confident that a sound empirical base for psychology had been constructed.

But we have already seen that the concept of mind generated by Descartes, Locke, Berkeley, and Hume was described by 'artificial' units borrowed from science. Ideas were 'abstract'--they were not defined in terms of the particular experiences of distinct individuals. Instead, these 'ideas' were fitted into mechanical, atomistic, non-developmental models of cognition of the type given in Hobbes' Leviathan (see Hobbes, 1651/1962, p. ix). Concepts of consciousness

had largely been developed in response to the problems and successes in science. And if physiology was to become an exact science, the 'mind' that it dealt with necessarily had to be constructed as a parallel to the construction of the physical world. Whether or not such a concept of mind was suitable from a strictly biological perspective was not initially questioned, and neurophysiological theorizing occupied a kind of middle ground, extending the potential domain of the natural sciences by 'concretizing' the assumptions of mental philosophy.

Nevertheless, the relationship between physiology and mental philosophy was not a simple one; the problem for physiological psychology was not merely one of finding 'data' which corresponded with philosophical postulates. The epistemological dualism necessitated by the primary and secondary qualities distinction, ratified by Locke and Newton, and the equally strong ontological mind-matter dualism of the Cartesian tradition, made an easy identification between brain events and mental events impossible. The nineteenth century investigators could not treat mind solely as a natural object in a world of other natural objects, for both streams of the philosophical tradition had been based on the essential differences between mind and matter the knower and the known. The empiricist insistence that all knowledge was gained from the senses did not do a lot to overcome these difficulties; Newton agreed with the rationalist position that the mere association of sensory information was insufficient to generate the universal laws. At the same time he was unwilling to embrace the Cartesian hypothesis of innate ideas. The problem was further intensified by the recognition that the process of discovering the laws of nature was attributable to man's reasoning powers. On every level, as Koyre shows, the split between mind and nature was complete (see

Koyré, 1965, pp. 22-23).

When physiologists began to look for the physiological correlates of mental activity, they were faced with the problem that reason and will were in a sense 'metaphysical' aspects of man's nature and therefore must be at some remove from direct observation, or at least functionally separated from the more 'animalistic' processes.[28] That man shared some 'mental capacities' with the animal kingdom had been recognized from the beginning by both philosophical traditions. The functional split in the nervous system between higher and lower centres and the corresponding tendency of theorists to try to ignore evidence for cerebral localization (see Young, 1970, pp. 202, 210-224), was almost inevitable.

Thus Bell's and Magendie's simultaneous discovery of the sensory-motor distinction was greeted with tremendous enthusiasm (see Young, pp. 78-80). The sensory-motor distinction was so important because it ratified the separation between the 'higher' and 'lower' centres. Young writes:

> There was no role for the hemispheres in the direct production of muscular motion, just as there was none for any of the senses except sight. The sensory-motor analysis of the spinal cord and its partial extension to structures higher up the neuraxis was a distinct topic from the analysis of the phenomena of the understanding. It employed different methods and assumptions and was part of a separate intellectual discipline (Young, discussing the structure of Magendie's theory of mind, 1970, p. 87).

The sensory-motor distinction, and the corresponding functional 'split' in the nervous system satisfied the initial demands of the scientific and philosophical traditions. Physiologists were explicitly

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28. Reason and will were metaphysical aspects of man's nature in the sense in which Hodgson defines metaphysics as the study of "phenomena which can be satisfactorily treated only from a subjective point of view" (Hodgson, 1870, I, p. 3).

conducting empirical studies on those aspects of 'mental' functioning which had already been agreed to belong to the natural world. And they were at least implicitly leaving those more 'metaphysical' qualities where they traditionally belonged--that is, to mental philosophy.

But the situation could not last: the effect of 'moving up' the nervous system was to gradually 'automatize' the very attributes of consciousness--reason and will--which had distinguished man in the first place, or to drive their characterization, in terms of their structure and function, back into metaphysics, thus ratifying the mind-matter distinction.

Bain and Mueller--the Marriage of Psychology and Physiology

This was the general state of the physiological model and its relationship with philosophy when Bain began his task of integrating psychology with physiology. And the nascent psychology had its problems too:

> Lockean tradition had been toward the sensory side, and ran the risk of a passive sensationalism. Neglect of spontaneous activity, motor phenomena, and overt behaviour was a natural consequence of the epistemological interests of the empiricists and their commitment to sensation as the primary (ultimately the only) source of knowledge (Young, 1970, p. 114).

This meant that 'psychology', as it had been developed by the Mills, had to be reworked before the discoveries of Magendie and Mueller could be integrated with it. The great edifice of associationism that James and John Stuart Mill had developed was not fundamentally incompatible with neurophysiological data, but the Mills, preferring to confine themselves to purely epistemological matters had neglected some of those aspects of consciousness that concerned the physiologists.

A bridge had to be built between the two systems. And this bridge was to be Bain's most important contribution to psychology (see Young, 1970, pp. 94, 98, 114-115).

Bain bridged the two disciplines by stressing the importance of activity and movement. He did this by making internal movement prior to sensation:

> Action is a more intimate and inseparable property of our constitution than any of our sensations, and in fact enters as a component part into every one of the senses, giving them the character of compounds while itself is a simple and elementary property (Bain, 1868, p. 59).

The organism is active before it is anything else: spontaneous movements are a primary feature of nervous activity and they exist prior to, and independent of, sensation. Bain is disputing the old empiricist conception wherein activity was stimulated solely by incoming sensation: in the older paradigm, activity was dependent upon sensation and it is in this sense that the organism is passive. Bain's inspiration that activity preceded sensation overturned the older assumption, and the concept of the active organism provided Bain with the means of making the connection between physiology and psychology. Bain could then go on to expand his position so that:

> We suppose movements spontaneously begun, and accidentally causing pleasure; we then assume that with the pleasure there will be an increase of vital energy, in which increase the fortunate movements will share, and thereby increase the pleasure. Or, on the other hand, we suppose the spontaneous movements to give pain, and assume that, with the pain, there will be a decrease of energy, extending to the movements that cause the evil, and thereby providing a remedy. A few repetitions of the fortuitous concurrence of pleasure and a certain movement, will lead to the forging of an acquired connection, under the law of Retentiveness or Contiguity, so that, at an after time, the pleasure or its idea shall evoke the proper movement at once (Bain, 1875/1888, p. 315).

Volition is now defined in terms of neurophsyiological activity combined with the sensations received as 'input' from the environment.

When Magendie defined will in terms of cerebral movements (see Young, 1970, p. 87), psychology and philosophy were faced with the danger of a materialist notion of volition. Bain's solution to the problem was rather brilliant. By making activity prior to sensation, he ensured that the organism at least moved, was receptive, etc., as a natural consequence of the life process. Spontaneity was possible in this model: the effect of any stimulus upon an individual would be partly determined by the state of the individual at the time he is stimulated, so that action depends on the interaction of the individual with the environment. This spontaneity is the basis of Bain's voluntarism; the individual is capable of acts which cannot be defined solely as a consequence of incoming stimulation, nor need there be any appeal to metaphysics as such (see Bain, 1875/1888, pp. 303-307).

At the same time, Bain regarded the laws of association as descriptive of the development of mental processes, and the thence continuing interaction of the individual with the world. The laws of association described the means whereby voluntary actions were 'conditioned' or 'learned'. The position becomes clearer if we look at the source of Bain's inspiration for his concept of activity. He found it in Mueller's work (see Young, 1970, p. 116),--not, interestingly, in Mueller's work on the cerebral cortex, but in his work on the development of volition. Mueller wrote:

> Thus a connection is established in the yet void mind between certain sensations and certain motions. When subsequently a sensation is excited from without in any one part of the body, the mind will be already aware that the voluntary motion which is in consequence executed will manifest itself in the limb which was the seat of the sensation; the foetus in utero will move the limb that is pressed upon, and not all the limbs simultaneously. The voluntary movements of animals must be developed in the same manner (Mueller, 1842, pp. 936-7, quoted in Young, 1970, p. 116).

Here then, in Bain and Mueller, psychologist and physiologist respectively, is the marriage between associationism and physiology: "With the incorporation of Mueller's theory into Bain's psychology, the union of sensory-motor physiology with associationism is, in principle, complete" (Young, 1970, p. 119). Bain contributed the 'psychology' in the sense that the laws of association could be productively used to describe the means whereby voluntary actions were first produced and later became 'habitual' activities. He also retained an appropriate organism for physiology: his concept of activity enabled theorists to describe the genesis of movement from within the individual organism so that psychology and physiology could begin with the examination of the internal state of the organism.

It is appropriate then, to look at the nature of the concept of consciousness generated by Bain and Mueller. Young remarks that Bain brought psychology out of the passive sensationalism that characterized empiricist epistemology and transformed it into a neurophysiological science which concentrated on activity, feeling, willing, and knowing (see Young, 1970, p. 120). This is true enough as far as it goes. But Bain's notion of activity is defined in terms of the early 'blind' or purposeless 'reflex movements' of the organism: these are then conditioned into meaningful, or purposive movements and the conditioning process consists of the interaction of reflex movements and sensations. Ideas, generated by the outcomes of these interactions, are developed as results or products. The laws of association describe the process whereby behaviour actually becomes purposive and conscious ideation develops. But the role of the 'mind', or 'consciousness', or 'thought' has undergone a drastic reduction as an efficacious determinant of activity. Purposive movement, in Bain's system, is the result of movements and ideas uniting with one

another in conjunctions described by the laws of association. Will is redefined in terms of the choices made from the possible alternatives (see Bain, 1875/1888, pp. 381-382, 497-498). The 'alternatives' develop according to the associative process, and all volitional activity can be meaningfully discussed within this psychological paradigm.

Bain combined associationism with Mueller's sensory-motor paradigm so that 'will' could no longer be discussed independently from the nervous system (see Young, 1970, pp. 118-119). He then specifically denied that any special agency or 'free will' existed to aid the individual in performing extraordinary activities (see Bain, 1875/1888, p. 500), and argued instead that: "Every act that follows upon the prompting of a painful or pleasurable state, or of the association with these, is a voluntary act, and is all that is meant or can be meant by moral agency" (Bain, 1875/1888, p. 501). While Bain's concept of activity seemed to include enough spontaneity to guarantee the efficaciousness of mind to contemporaries like J.S. Mill (see Peters, 1962, p. 459), he had dispensed with the idea of a soul or unifying agency for consciousness and wrote in The senses and the intellect:

> When the mind is in the exercise of its functions, the physical accompaniment is the passing and re-passing of innumerable streams of nervous influence. Whether under a sensation of something actual, or under an emotion or an idea, or a train of ideas, the general operation is still the same. It seems as if we might say, no currents, no mind. The transmission of influence along the nerve fibres from place to place seems the very essence of cerebral action.[29]

This statement seems very reasonable in the context of present-

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29. Bain, 1868, p. 53; see also Bain, 1855, pp. 61-62, where Bain comes to the same conclusions regarding the importance of currents. The 1868 edition is quoted here because Bain's general statement is clearer.

day psychology. But it was considered far more radical when Bain first made it in 1855, and it demonstrates the extent of the transfer from the purely epistemological conceptions of mind to a biological base for mental activity. Bain took care to show that the physical structure of the nervous system was related to mental functioning (see Bain, 1868, pp. 10-53). At the same time he tried to rid psychology of any metaphysical descriptions of mental functioning, notably in regard to the will. Volition and reason would now be discussed from a physiological point of view. To discuss a volitional act was coming to mean that the biological factors, as well as the psychological associative factors had to be included; at the same time, any discussion of the 'special' status of the volitional action was precluded. Will and reason were now defined as natural, non-mysterious, scientifically describable qualities of man, firmly rooted in cerebral physiology.

Spencer's Radical Associationism

While Bain did not regard himself as a determinist, George Henry Lewes took a strong stand in favour of a determinist approach to questions concerning the efficacy of consciousness. Lewes reduced all volition to physiological dynamics, and sought the conditions for volition within the neurophysiological theories of his time. He once wrote, rather dramatically, that:

> All the massive evidence to be derived from human conduct, and from our practical interpretations of such conduct points to the conclusion that actions, sensations, emotions, and thoughts are subject to causal determination no less rigorously than the movements of the planets or the fluctuations of the waves. Indeed, no modern thinker of any worth would affirm that our volitions are uncaused,--are freed from the inexorable subjection to conditions. The question is, what are the conditions? (Lewes, 1879, p. 102). [30]

30. See also Smith, 1970, p. 52. Smith writes that Lewes believed (contd.)

Lewes is important in this account if only because he first acquainted Herbert Spencer with philosophy (see Young, 1970, p. 162). Moreover, Lewes' commitment to the physiological approach to mind influenced Spencer in the construction of his own biological model of consciousness.

Spencer's wholehearted commitment to the task of formulating and systematizing his biological theory of evolution determined his approach to psychology. His famous statement that life can be defined as "the continuous adjustment of internal relations to external relations" (Spencer, 1870, 1, p. 293), included all possible physical and mental activities and the 'growth' or 'adaptive' processes that fitted the organism into an active interaction with the environment. He concentrated on the neurophysiological basis for consciousness and used the laws of association to explain the conscious interaction between the individual and the environment. According to Spencer, consciousness accompanies movement, but it does not instigate it (see Peters, 1962, pp. 665-666). Spencer distinguishes between voluntary and automatic activity, but the distinction is an experiential one only; the neurophysiological process is the same in both types of activity:

> Between an involuntary movement of the leg and a voluntary one, the difference is that whereas the involuntary one occurs without previous consciousness of the movement to be made, the voluntary one occurs only after it has been represented in consciousness; and as the representation of it is nothing else than a weak form of the psychical state accompanying the movement, it is nothing else than

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30. (contd.) that there were no differences between voluntary and involuntary actions; mind and body "were merely contrasting aspects of the functional whole", and the brain, as well as the lower centres, functioned in terms of reflex actions.

> a nascent excitation of the nerves concerned, preceding their actual excitation. Involuntary movement implies that the psychical states accompanying the impressing and the action, are so coherent that the one follows the other instantly; while voluntary movement implies that they are so imperfectly coherent, that the psychical state accompanying the action does not follow instantly--is partially aroused before it is fully aroused; and so occupies consciousness for an appreciable time. Thus the cessation of automatic action and the dawn of volition are one and the same thing (Spencer, 1870, 1, p. 497).

Actions or movements are determined by experience (individual or generational), which is registered in the individual nervous system (see Spencer, 1870, 1, p. 502). As the individual develops, "Both memory and reasoned action tend to lapse into automatism" (Young, 1970, p. 180; see also Spencer, 1870, 1, p. 499). Spencer completes his deterministic stand when he argues that if psychology is to make any sense as a science, then free will is impossible (see Spencer, 1870, 1, p. 503). Furthermore, he states, free will:

> would be at variance with the beneficent necessity displayed in the evolution of the correspondence between the organism and its environment. ...As it is, we see that the continuous adjustment of the vital activities to activities in the environment must become more accurate and exhaustive. The life must become higher and the happiness greater--must do so because the inner relations are determined by the outer relations. But were the inner relations partly determined by some other agency, the harmony at any moment existing would be disturbed, and the advance to a higher harmony impeded (Spencer, 1870, 1, p 503).

Spencer did not specifically declare himself as an automatist; he was endeavouring to bring psychology into the biological sciences as a naturalistic science in its own right and his argument that the acceptance of 'supernatural' forces such as free will would prevent a naturalistic interpretation of mind is in keeping with his recognition that evolutionary theory required a functional naturalistic, definition of mind. The importance of Spencer's position must not be underestimated because Spencer's willingness to sacrifice free will

in favour of an orderly evolutionary progress was a critical factor in the immediate development of evolutionary psychology as will be shown below.

William Carpenter's Dilemma

Spencer's assurance that the "Newtonian" concept of progress could be redefined in evolutionary terms reflects a radical optimism and a faith in science that was not shared by all of his contemporaries. The problems faced by the nineteenth century psychologists and physiologists find better expression in the works of William Carpenter than in those of Spencer. As physiology advanced, more and more of conscious activity seemed to be explainable within the paradigm of physiological research. That is, reason, memory, and movement all seemed to have physiological correlates in the brain itself; when certain areas of the cerebral cortex and cerebellum were stimulated or ablated, mental processes were substantially altered. Advances in physiology were rapid; if progress in the biological sciences was to continue along the paths opened by physiology and evolutionary theory, it appeared likely that a valid naturalistic understanding of the mental processes was in sight (see Mackenzie, 1976, pp. 331-332).

Carpenter was a physiologist, and a successful one. He was a conscientious and dedicated scholar, and he recognised the significance of the biological and physiological discoveries of the era. He accepted Darwin's theory of evolution when Darwin published it in 1859 (see Smith, 1978, p. 11). And he was later to recognise that the discoveries of Fritsch and Hitzig and Ferrier, of motor areas in the cerebral cortex were both important and problematic in terms of the construction of an efficacious model of consciousness (see Young,

1970, pp. 211, 214). But these discoveries only provided additional support, in Carpenter's view, for the advance of scientific materialism. By 1855, Carpenter was already concerned about the dangers of an emerging scientific materialism which seemed to be growing more rapidly than in any previous period of epistemological history. Thus Carpenter wrote:

> The chief subject of embarrassment, however, is rather the nature and source of the Will itself, than the condition of its operation; for whilst a careful analysis of our own consciousness throws much light upon the latter, the scientific investigation of the former has seemed to lead to results which are inconsistent with our intuitive conviction of freedom, as well as with our scarcely less intuitive notion of moral responsibility (Carpenter, 1855, p. 618).

Carpenter saw, more clearly than most, that biology was taking its place in the sun. At the same time, he was determined to "exhibit the power and reality of the human will" (see Peters, 1962, p. 663). The accumulation of physiological data (by 1855) 'proved' that cerebral action produced movement only indirectly; Carpenter's solution to the problem was to suggest that the will 'works' through voluntary attention (see Carpenter, 1855, p. 621): it focuses or holds the attention on certain ideas and it is through this means that 'willed' or 'voluntary' actions are performed. The ability to maintain a particular thought or train of thoughts in consciousness prevents the individual from behaving as a conscious automaton in all instances. Carpenter concluded that it is only when the will specifically focuses the attention that the individual behaves in a voluntary fashion:

> For we have seen that, in so far as the directing influence of the Will over the current of thought is suspended, the individual becomes a thinking automaton, destitute of the power to withdraw his attention from any idea or feeling by which his mind may be possessed, and as irresistibly impelled, therefore, to act in accordance with this, as

> the lower animals are to act in obedience to their instincts (Carpenter, 1855, p. 627).

Carpenter limited the efficacy of the will to its power to maintain selected ideas in consciousness; the nervous system was responsible for automatic or reflex actions, and most actions, such as walking, which at first require volition, were eventually performed by habit. Furthermore, Carpenter stated:

> that even in voluntary movements the Will cannot single-out any one muscle from the group with which it usually cooperates, so as to throw this into separate contraction, but is limited to determining the results, it seems pretty obvious that even here the grouping is effected by the endowments of those Automatic centres from which all motor impules immediately proceed to the muscles, and not by cerebral agency (Carpenter, 1855, p. 742).

Will provided the determination to perform a particular act, but did not determine the muscular action itself whereby the act was performed. Moreover, will seemed to be an acquired capacity for the individual:

> For it becomes obvious that the acquirement of Voluntary power over the movements of the body is just as gradual as it is over the direction of the thoughts; all the activity of the body, as well as of the mind, being in the first instance automatic; and the Will progressively extending its domination over the former, as over the latter, until it brings under its control all those muscular movements which are not immediately required for the conservation of the body, and turns them to its own uses (Carpenter, 1855, pp. 742-743).

The will saves us from being automatons, but the operations of the will itself are fairly restricted; willed action is exceptional, difficult, and volitional abilities are developed abilities (see Carpenter, 1855, p. 742). Carpenter seems to be making a rather desperate attempt to save some aspect of the mental operations from automatism. He was caught not only within the almost overwhelming neurophysiological evidence for psychophysical determinism, but found himself compelled to agree that the power of the will could be

suspended, in cases of hypnotism and somnambulism. Carpenter attended seances and spiritualist meetings (see Carpenter, 1855, p. 619, and Smith, 1978, p. 6) and was impressed by the ability of the hypnotists to cause their subjects to act as automatons; the subjects performed actions requiring 'voluntary' movements but they did so solely at the instigation of the hypnotist. Thus, Carpenter maintained that it was an empirical fact that one individual could cause the psychological suspension of another's will.

While Carpenter, then, was anything but an automatist, his theory of volition has many of the elements of an automaton theory. Volition is necessary for the learning process to proceed, but it is limited to selecting ideas; will has no direct influence upon the musculature. And even when the will is active, it can only control those aspects of the organism which are not focused upon conservation of the body.

Carpenter's belief that free will could be 'correlated' with the directly physically describable 'mental phenomena' in a comprehensive philosophy of nature is emphasized by Smith (see Smith, 1970, p. 12 and Smith, 1978, p. 9; see also Peters, 1962, p. 663). Carpenter's position contrasts directly with Bain's so that Carpenter and Bain can be taken as representing the two 'poles' of the mid-nineteenth century debate on the relationship between science and metaphysics. As Smith says, there are strong Cartesian elements in Carpenter's philosophy of mind (see Smith, 1970, p. 109). Carpenter initially isolated the cerebrum as the 'site' of mind-body interaction (see Smith, 1970, p. 109), although he later modified his theory under the influence of the data on hypnotism and somnanbulism to make the cerebrum a centre for the reflex action and 'unconscious cerebration' as well. Therefore the theory of ideo-motor action

was developed as an exception to the strict reflexology of the lower centres so that Carpenter's theory of the structure and function of the nervous system is intended to be hierarchical rather than continuous (see Smith, 1970, pp. 110-118).

Smith stresses that Carpenter did not make the cerebrum the locus of the mind (see Smith, 1970, p. 119); while his view of the nervous system as a whole was given more and more over to the 'automatic' nature of mental activity, and as his theories were modified to accord with the cumulative body of physiological and 'spiritualistic' research, Carpenter retained a Cartesian notion of purpose. According to Smith, "purpose was a mental phenomenon which could causally interact with the physical world" (Smith, 1970, p. 119). While Carpenter encouraged the reduction of psychology to physiology, he vehemently refused to consider that mind itself could be reduced to matter (see Smith, 1970, p. 263). Carpenter connects mind and matter through the aegis of the 'Vital Force'--mind, for Carpenter, as Smith demonstrates, worked as a force in the physical world--so that Carpenter ended up with a theory of psychophysical interactionism (see Smith, 1970, pp. 239-240).

While Carpenter's notion of mind as a vital force seemed to overcome some of the materialist dangers that the growth of physiology brought to psychology, the status of the notion and its effectiveness in meliorating the deterministic trend of the new psychology is questionable. The vital force had its analogue in the mechanical forces of Newtonian mechanics and served the epistemological function of accounting for psychological knowledge of the primary qualities of real objects (see Smith, 1970, pp. 132-135, 143). But in Carpenter's usage, it has more in common with metaphysics than with the science of psychology <u>per se</u>. The will, in Carpenter's system, is basically

a metaphysically defined structure. Its status depends on there being 'more' to human activity than can be described within the physiological psychology of the day. Thus there is a sharp, though unintentional, ontological break in Carpenter's psychology between those activities which can be attributed to naturalistic causes and those which rely on the 'divine'. The ontological break is made within the mind itself. That is to say, the older Cartesian dualism was based on a strict break between mind and matter; the new Cartesianism relies on the distinction between those mental processes which are 'automatic' and those which are not. The break is not simply made between 'higher' and 'lower' mental life; the distinction is made between the sometimes voluntary, and sometimes involuntary, nature of the same act.

In light of subsequent developments in psychology, it is important to emphasize those aspects of Carpenter's theory which diminish the role of the will as a causative agent of activity. It is interesting that James included Carpenter along with Bain, Spencer, Hodgson, Clarke, and Maudsley (see James, 1890, 1, p. 131), in his list of theorists whom he considers guilty of postulating a neurophysiologically deterministic view of volition. James make no mention of Carpenter's conception of free will in the Principles although it is obvious that he must have been familiar with it as his own notion of effortful volition has many structural points in common with it. James was concerned with establishing the primacy of ideation as the means through which actions are instigated and he describes Carpenter's conception of ideo-motor action quite accurately when he says that Carpenter placed ideo-motor action "among the curiosities of our mental life" (James, 1890, 2, p. 522; see also Carpenter, 1855, p. 610, for verification of James' interpretation). The point is that

the parts of Carpenter's work which seem to have made the deepest impression on James at least, are those which tend towards physiological determinism rather than the attempts he made to find a way out of determinism. This in itself is interesting, for James was desperately concerned with finding a means of retaining the concept of free will as an integral attribute of human consciousness. But Carpenter's dualism makes a naturalistic depiction of free will impossible, and this accounts for James' neglect of Carpenter's theory of free will.

Carpenter's dilemma was difficult; the epistemological postulates of mental philosophy were being re-expressed in physiological terms. This meant that there were now agreed on criteria of evidence. The distinction between 'automatic' and 'volitional' or 'reasoned' activities could no longer be made in terms of analogies with science, remaining all the while at the speculative or introspective level. It meant that the same kind of evidential criteria available in the scientific world were now available to mental philosophers and these criteria therefore could not be ignored. Thus, the 'cuts' between the various types of mental activity had to be made according to methodologically determined criteria; they were no longer contained within the stream of epistemological speculation. The 'meaning' of the automatic sensory and perceptual processes had shifted from analogy to biological data. The components of mind discussed were not substantially altered. What was altered was the way in which they were discussed.

Not all psychologists, mental philosophers, and scientists had Carpenter's deep seated faith in the 'divine' aspects of human consciousness. And his scientific honesty compelled him to modify his theory of consciousness to include the very discoveries in

science and physiology which were to undermine the whole notion of free will. His insistence on keeping some aspects of mental functioning on a distinctly different ontological plateau made it that much easier for those who followed to discard the 'metaphysical' notion of the vital force and concentrate on those aspects of mind which could be scientifically and biologically discussed.

The Declared Automatists

Bain, Lewes, Spencer, and Carpenter brought psychological theorizing to the point where an automaton view of mental and physical functioning was at least implicit within their conclusions. But it remained for the next 'generation' of thinkers to explicitly declare that man functions as a conscious automaton. Hodgson, Tyndall, Clifford, Huxley, Spalding, Maudsley, and Clarke gave voice to the view that:

> in everything outward we are pure machines. Feeling is a mere collateral product of our nervous processes, unable to react upon them any more than a shadow reacts on the steps of a traveller whom it accompanies. ...The theory also maintains that we are in error to suppose that our thoughts awaken each other by inward congruity or rational necessity, that disappointed hopes cause sadness, premises conclusions, &c. The feelings are merely juxtaposed in that order without mutual cohesion, because the nerve-processes to which they severally correspond awaken each other in that order (James, 1879, p. 1).

Shadworth Hodgson was the first theorist to explicitly advocate an automatist view of consciousness. In his Theory of practice, published in 1870, he argued that causation could not be attributed to consciousness; instead, causation was limited to the actions and reactions of atoms, molecules, and physical masses (see Hodgson, 1870, 1, p. 337). Changes in the nervous system accounted for the existence of feelings; the feelings themselves, however, were

powerless to act upon the nervous system:

> the immediate cause of both feeling and changes in feeling is found in the nervous organism alone. Feelings are not the causes of feelings; there is no causation between them; the series of feelings which constitutes a life can be arranged in a classified order, but the former members of the series do not contain the cause of the later members. Neither do feelings react upon, or contain the causes of, subsequent states of the nervous organism upon which other feelings depend. The sequences and combinations of feelings form, as it were, a kind of mosaic picture, the separate stones of which both support the picture and keep each other in their places; the stones are the states of the nervous organism, the colours on the stones the states of consciousness which are supported by the nerve states, without being themselves causes either of one another or of changes in the nerve state which support them (Hodgson, 1870, 1, pp. 335-336).

Shortly after, in 1874, Huxley stated that in both animals and men, changes in consciousness are caused by molecular changes in the brain tissue so that:

> Our mental conditions are simply the symbols of consciousness of the changes which take place automatically in the organism; and that, to take an extreme illustration, the feeling we call volition is not the cause of a voluntary act, but the symbol of that state of the brain which is the immediate cause of that act. We are conscious automata (Huxley, 1874/1894, p. 244).

And Clifford, who argued against the possibility of free will, advocated a kind of psychophysical parallelism which kept physical and mental events completely separate so that:

> The two things are on utterly different platforms--the physical facts go along by themselves, and the mental facts go along by themselves. There is a parallelism between them, but there is no interference of one with the other (Clifford, quoted in James, 1890, 1, p. 131).

Tyndall's position is basically the same as Clifford's. He agrees with Spencer that the human understanding must be a product of the interaction between the organism and the environment (see Tyndall, 1874/1879, p. 197), but he also maintains that:

> We can trace the development of a nervous system, and correlate with it the parallel phenomena of sensation and thought. We see with undoubting certainty that they

> go hand in hand. But we try to soar in a vacuum the moment we seek to comprehend the connection between them (Tyndall, 1874/1879, p. 196).

Tyndall finally expressed himself as a parallelist, seceding from the automaton position because he could not see how molecular activity could produce feelings or thoughts as by-products of activity (see Tyndall, 1879, p. 409). At the same time he could not see how feelings could possibly produce molecular activity, and therefore incite movement (see Tyndall, 1879, p. 408). He feels that the problem is unresolvable:

> We can form a coherent picture of all the purely physical processes--the stirring of the brain, the thrilling of the nerves, the discharging of the muscles, and all the subsequent motions of the organism. We are here dealing with mechanical problems which are mentally presentable. But we can form no picture of the process whereby consciousness emerges, either as a necessary link, or as an accidental by-product, of this series of actions. The reverse process of the production of motion by consciousness is equally unpresentable to the mind. We are here in fact on the boundary line of the intellect, where the ordinary canons of science fail to extricate us. If we are true to these canons of science, we must deny to subjective phenomena all influence on physical processes (Tyndall, 1879, p. 410).

Consciousness seems to have no necessary function whatsoever in this model. Thus, Tyndall's denial of the validity of the automaton position does not essentially change the status of consciousness in his theorizing--he has simply removed it from one non-efficacious standing to another so that it seems justifiable to treat the avowed automatists and the parallelists such as Clifford and Tyndall together. Spencer himself had settled for the parallelist position in the end, writing:

> The nature of Mind as thus conceived, will be elucidated by comparing it with the nature of Matter; and the fact that a parallelism exists between that which chemists have established respecting Matter and that which we here suppose respecting Mind, will help to justify the conception (Spencer, 1870, 1, pp. 154-155).

Maudsley, on the other hand, developed a theory of mind wherein all conscious events depended entirely on the workings of the nervous system (see Smith, 1970, pp. 65-66). Of memory in the nerve centres he writes: "This capacity of retention, which is the foundation of the mental faculties called acquisition, retention, recollection, is a purely physiological property, essentially independent of consciousness"(Maudsley, 1883, p. 116). He therefore denies that free will is operative in human consciousness:

> To any affection whatever of consciousness a prior state of brain is essential; and to say so much as that is to involve the external world in every act of consciousness, since it is by involution of the external that the structure of the mental organization has been framed. All which, if true, clearly leaves no place where the will may get the self-sufficing nature which the theory of its freedom demands (Maudsley, 1883, p. 55).

But Maudsley's most radical statement probably concerns his hypothesis on what the consequences would be if human beings were without consciousness. The notion itself is startling, coming as it does within the rationalist-empiricist tradition, and it is therefore worth quoting Maudsley at some length:

> If we could imagine human beings to have been constructed just as they are, with the one exception that they were without consciousness, and to have been placed in exactly similar circumstances to those which they have been placed, we may be sure, I think, that their doings would have exhibited a logical connection; that in the synthesis of impressions made upon them, and in the deductions of conformable action, there would have been implicit that which, when illuminated by consciousness, we call reason. No organic being could live and thrive without having some sort of synthesis, though an entirely unconscious one, of the world; it is implicit in every purposive reflex act, which is itself virtually an unconscious judgment and the basis of conscious judgments. It is from this solid standpoint that the ways and doings of animals and savages ought to be studied. They are examples of reason latent or implicit in adaptive organic function, and they do not necessarily postulate the bright consciousness with which we illuminate them when reflecting on them. The reason is rooted in the mechanism, not in the light by which consciousness reveals its operations: the conscious theory is the transcript, not the original (Maudsley, 1883, p. 117).

This then, is basically the automatist position. While there are disagreements among its exponents on the exact nature of the relationship between consciousness and the nervous system, they all agree that consciousness has no direct effect on behaviour as it is mediated through the nervous system, and that it is unnecessary for the orderly production of responses.

Darwin's Contribution

The paradigm that has been building in the new psychology is one which combines a naturalistic physiological account of activity with the laws of association. So far, we have concentrated upon the factors within mental philosophy and physiology responsible for the deterministic account of the mental processes. But the decisive factor in the birth of automaton theory was of course, Darwin's theory of evolution. Darwin's influence has been left until this point because Bain, Carpenter, and Lewes were not 'Darwinians' in the same sense that the declared automatists were. Bain and the others accepted Darwin's theory but merely integrated the notion of evolution into their works. Spencer was tremendously influenced by Darwin, but developed an independent theory of evolution. And he is treated here with Bain, Carpenter, and Lewes because the declared automatists looked to his psychology for guidance in generating their own views on mental efficacy; it is therefore historically 'expedient' to treat Spencer with the earlier thinkers.

But the declared automatists cannot be meaningfully discussed without taking Darwin's influence into account. Darwin unintentionally provided the catalyst that made the birth of automaton theory virtually inevitable.[31]

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31. It should be noted that Darwin was not an automatist: what

(contd.)

It has become a truism to say that Darwin's theory was so successful because he had a mechanism to explain the evolutionary process (see Young, 1971, pp. 444-445). The process of natural selection appeared to explain species differentiation (see Young, 1971, pp. 452-456), and thus provided scientists with a means of accepting the mass of biological data contained in Darwin's book and the works of earlier scientists. And while many theologians, philosophers, and scientists were skeptical, the importance of Darwin's conclusions could not be denied; in any event, Darwin's Origin appeared as the climax of a growing tendency towards the acceptance of evolutionism (see Millhauser, 1959, pp. 58-85).

Carpenter and Bain recognized this: Carpenter believed that religion and Darwinian theory were compatible (see Smith, 1978, pp. 11-12), while Bain eventually revised his work to include the new theory (see Peters, 1962, p. 456). This was not difficult for Bain because he was ardently committed to making physiology the basis for psychology, and his agnosticism (see Hearnshaw, 1964, p. 8) meant that he had few difficulties in accepting the evolutionary position.[32]

Other thinkers were sufficiently convinced by the new theory so that they made spirited defences of Darwin against his attackers. They were sure that the combination of Darwin's empirical data and

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31. (contd.) he had to say about psychology he took from Bain, Spencer, and Mueller (see Darwin, 1873, p. 353).

32. Perhaps Bain found evolutionary theory acceptable partly because it was Mueller's work which provided the basis for Bain's concept of volition. Mueller's psychological theories in turn were influenced by Erasmus Darwin (see Young, 1970, p. 117), so that there was already an evolutionary current running through physiology before evolutionary theory as such was proclaimed in the scientific world.

the mechanism of natural selection would bring the biological sciences into line with the rest of science. We have already seen that the framework of neurophysiological investigation was determined by the same rationalist-empiricist tradition that developed along with and interacted with the development of the physical sciences. Evolutionary theory provided another means of bringing mental philosophy--heavily neurophysiologically oriented by now--into line with the hard sciences.[33]

Evolutionary theory did this because it was a biological theory; biology had already served, through physiology, to unite the scientific approach to the mind with mental philosophy. But the biological physiology that we have examined was not 'formalized' into a paradigm until the advent of evolutionary theory. Physiologists took their theoretical frameworks from philosophy so that the 'theories' behind research were varied--for example, Flourens' and Carpenter's Cartesianism and Magendie's sensationalism. Evolutionary theory, on the other hand, had all the necessary components of a scientific theory so that it could unite research efforts and at the same time, elevate biology to the status of a real science.

As Tyndall wrote: "The strength of the doctrine of Evolution consists, not in experimental demonstration (for the subject is hardly accessible to this mode of proof), but in its general harmony with scientific thought" (Tyndall, 1874/1879, p. 196). Tyndall's notorious "Belfast Address", and T.H. Huxley's "On the hypothesis

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33. The tension between the scientific community's desire to ensure the uniformity of nature, and the advocates of Natural Theology is discussed by Young in relation to evolutionary theory (see Young, 1971, pp. 471-487), and Smith, in relation to mind-matter dualism (see Smith, 1970, pp. 242-244). 'Psychology' essentially occupied the middle ground between the two poles of the debate.

that animals are automata, and its history", also given in Belfast in 1874 before the British Association, are interesting not only because they are radical defences of evolutionary theory but because both Huxley and Tyndall use explicitly presentistic arguments. Tyndall's presentism is demonstrated in his analysis of what he considers to be the two main approaches to understanding the world: he places the writings of Democritus, Lucretius, Newton and Maxwell against the metaphysical-theological works of Aristotle, the Schoolmen, and Bishop Butler, to create a system where evolution and mechanics are combined to present the productive course throughout history. The climax comes, for Tyndall, with the appearance of Darwin's theory, which at last completes the developing historical tendency towards a uniform model for understanding all aspects of nature, by bringing mechanics and biology together (see Tyndall, 1874/1879, p. 190). According to Tyndall, evolutionary theory is a fitting development within the context of the rationalist-empiricist tradition (as Tyndall defines the tradition), and is thus historically as well as scientifically justified.

Huxley's article makes an even more obvious link between evolutionary theory and the Enlightenment, for Huxley argues that Descartes' philosophy is largely compatible with nineteenth century physiology.[34] And while Huxley is not prepared to accept Descartes' hypothesis that animals are machines, he does concur with the notion that they may be conscious automatons and he soon extends that analysis

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34. See Huxley, 1874/1894, pp. 203-218, where he shows that Descartes gave expression to those principles which lie behind nineteenth century physiology--that is, that the brain is the organ of sensation, that animal movement is caused by changes in the muscles, that animal sensations are "due to a motion of the substance of the nerves which connect the sensory organs with the brain"(Huxley, 1874/1894, p. 208), that volition is not required for sensory nerves to incite motor behaviour, and that memory is the product of the motions of the brain as the brain is excited by motions of the sensory nerves.

to include men as well. What Huxley is essentially doing, like Tyndall, is selecting those propositions which seem to anticipate, or progress toward, developments in nineteenth century evolutionary theory. At the same time, both writers show that advances in science provide the data which justifies certain philosophical speculations of the earlier period, so that these speculations are given some sort of 'veracity'. Both Huxley and Tyndall are concerned with establishing the connections between evolutionary theory and traditional science and epistemology, to give credence to their hypothesis that evolutionary theory is compatible with the Newtonian world-view.

In this context, Huxley and Tyndall argue that viable models of consciousness must necessarily be naturalistic, physiological, and mechanistic. Furthermore, their theories of consciousness are based on Spencer's, and not Darwin's evolutionism. The selection of Spencer's theory of mind is hardly surprising. Darwin had little to say about psychology in his published works. He relied on traditional associationism to describe conscious behaviour and cited Bain, Spencer, and Mueller in his discussion of volition.[35]

What Darwin did contribute was the naturalistic system which could be extended by others to include psychology. Tyndall regarded Darwin as the towering figure of the age (see Tyndall, 1874/1879, pp. 182-183), because he made sense of the biological activity that

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35. See Darwin, 1873, p. 353 where expressions are described as the products of instincts and habits. Gruber however maintains that there is far more psychology in Darwin's works than first appears to be the case and he says that this can be appreciated once Darwin's notebooks have been studied (see Gruber, 1974, p. 231). This is a valid argument; the reasons for not looking more closely into Darwin's works for a system of psychology is that we are concerned here with the interpretation his contemporaries gave to his works and his contemporaries did not see him as making a contribution to psychology in the same way that Spencer made one.

takes place in the physical world. But after paying tribute to Darwin, he then goes on to say that: "Besides the physical life dealt with by Mr. Darwin, there is a psychical life presenting similar gradations and asking equally for a solution" (Tyndall, 1874/1879, p. 184). With that, Tyndall turns to Spencer (see Tyndall, 1874/1879, pp. 184-190, 197), and ratifies Spencer's conception that "The Human Understanding, ...is itself a result of the play between organism and environment through cosmic ranges of time" (Tyndall, 1874/1879, p. 197).

Huxley's Belfast Address is a little more difficult to analyze in this way: he does not specifically mention Darwin or Spencer and we are forced to look for their related influences in Huxley's terminology. Thus he echoes Darwin when he speaks of "the struggle for existence in the animal world" (Huxley, 1874/1894, p. 237), but he correspondingly echoes Spencer when he states that "the living body is not only sustained and reproduced: it adjusts itself to external and inner changes; it moves and feels" (Huxley, 1874/1894, p. 200), although he gives Descartes credit for the concept. And when Huxley concludes that:

> We are conscious automata, endowed with free will in the only intelligible sense of that much-abused term --inasmuch as in many respects we are able to do as we like--but none the less parts of the great series of causes and effects, which in unbroken continuity, composes that which is, and has been, and shall be-- the sum of existence (Huxley, 1874/1894, p. 244),

it is Spencer's voice, not Darwin's, that we hear behind his words. Huxley was of course an ardent supporter of Darwin, and stated in his paper "The progress of science", that:

> So far as biology is concerned, the publication of the "Origin of Species", for the first time, put the doctrine of evolution, in its application to living things, upon a sound scientific foundation. It became an instrument

> of investigation, and in no hands did it prove more brilliantly profitable than in those of Darwin himself (Huxley, 1887/1894, p. 101).

But Huxley gave Spencer credit for systematizing "Evolution, as a philosophical doctrine applicable to all phenomena, whether physical or mental, whether manifested by material atoms or by men in society" (Huxley, 1887/1894, p. 102). Thus, for the polemicists of evolutionary theory, Darwin and Spencer represented the two halves of a broad, universal system.

The reasons why Huxley, Tyndall, and others followed Spencer should be clear now: Spencer derived the specific structures, contents, and functions of mind according to evolutionary principles. The incompatibilities between Darwin's and Spencer's evolutionary systems were yet to be worked out; both systems underwent substantial modification in the years that followed, as the foundations for the concepts and conclusions of both systems were more closely examined.[36] In the early days of evolutionism it seemed clear to Tyndall, Huxley, and their contemporaries that the two systems could be accepted as providing complementary analyses of different aspects of the natural world.

How great <u>was</u> the debt of the automatists to evolutionary theory? Tyndall and Huxley combined evolutionary theory with Newtonian mechanics and neurophysiology and saw the combination as the beginning of a comprehensive world view (see Huxley, 1887/1894, pp. 96-134; and Tyndall, 1877/1879, p. 374; 1879, pp. 387-396). And they were both popularizers of evolutionary theory.

Shadworth Hodgson was not. And this is interesting because

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36. See Young, 1971, pp. 467-503, for discussion of the modifications made on the concept of natural selection.

Hodgson was the first of the 'declared automatists'.[37] Hodgson makes few explicit references to either Darwin or Spencer in his Theory of practice where he first presents his automaton theory of consciousness.[38] Instead, "Independent and workmanlike, Hodgson was remarkably free from the characteristics and fashions of late Victorian philosophy."[39] But while Hodgson makes few explicit references to evolutionary theory, he speaks from a post-evolutionary standpoint: "The analysis here given of the moral sense applies to it at every stage of its development both in the individual and the race."[40] Moreover, he uses Spencer's work as the foundation for his automaton theory of consciousness. He argues, on the basis of Spencer's analysis, that experienced pleasures and pains cannot be considered as evidence for an efficacious consciousness. Instead, pleasures and pains are the products of nerve moments (see Hodgson, 1870, 1, pp. 424-426). Hodgson uses the same analysis for the workings of the will:

> The moment of choice or decision between representations is exhaustively described by the analysis which has been

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37. See James, 1890, 1, p. 130: "But it was not till 1870, I believe, that Mr. Hodgson made the decisive step by saying that feelings, no matter how intensely they may be present, can have no causal efficacy whatever."

38. See Perry, 1935/1974, 1, pp. 615, 630-633. In Time and space (1865) Hodgson rejected an automatist view of consciousness and it was not until 1870 that he affirmed it in his Theory of practice; after that, he remained a convinced determinist.

39. Davie, 1967, pp. 47-48. Davie adds that Hodgson was considerably influenced by Ferrier, who provided the neurophysiological evidence that he based his 'psychology' on.

40. Hodgson, 1870, 1, p. 254. Hodgson refers to Spencer as follows: "See the admirable Chapter on Pleasures and Pains, and the connection of their phenomena with the general doctrine of Evolution, in Mr. Herbert Spencer's Principles of Psychology" (Hodgson, 1870, 1, p. 426; see also pp. 416-436). Hodgson's automaton theory is described here. He bases his conclusions on the nature of the relationship between consciousness and the nervous system.

> offered of the course of nerve movements in conflict. There is no feature in it which does not find a corresponding feature in the conflict of nerve movements to which it may be referred (Hodgson, 1870, 1, p. 428).

Consciousness depends upon nerve movement and in no case does it ever excite nerve movement. Consciousness is the evidence of physical causation: it is the cogent reflection, as it were, of the physical system (see Hodgson, 1870, 1, pp. 428-431).

While Huxley and Tyndall wrote from the perspective of defendants of the new evolutionary approach, Hodgson had already transcended the 'polemical' period and wrote a sober treatise where evolutionary ideas were treated as established or useable concepts in their own right. Thus he stands as one of the first figures to begin the 'philosophication' of evolutionary theory.

W.K. Clifford's position in the establishment of the automaton view of mind is similar to Hodgson's. He began his career as an advocate of Catholicism, sustained by the writings of Aquinas; he later dropped this allegiance, declared himself an agnostic, and embraced evolutionary theory through the works of Darwin and Spencer (see Smokler, 1967, p. 123). This led him to promote an epistemology where the structure of knowledge is determined by the biological adjustments made by the individual and the race to the environment (see Smokler, 1967, p. 123). In line with Clifford's acceptance of evolutionary concepts and his corresponding agnosticism, is his statement that beliefs must not be accepted until the would-be believer can be sure that all possible evidence corroborates the belief. Partial evidence is not sufficient; for Clifford the danger in accepting partial evidence lies in the propensity of the individual to fill in the framework of the theory with inductive inferences (see Smokler, 1967, p. 124), so that 'unproveable' systems of philosophy and theology

are developed. Like Spencer, Clifford was willing to deny the possibility of free will because it interfered with the development of an evolutionary, naturalistic explanation of mental and physical phenomena. And like Hodgson, Clifford immediately turned to the philosophical implications of evolutionary theory. Clifford's early death prevented further development of his system, but from what we have of it, it would seem that he stands halfway between Hodgson and Huxley and Tyndall. Half polemicist, he was also concerned with the 'philosophication' of evolutionary theory.

Maudsley took a somewhat different position; he dismissed Spencer's model of life as the adjustment of inner to outer relations as superficial (see Maudsley, 1883, p. 129), ratified Darwin's mechanism of natural selection (see Maudsley, 1883, p. 137), and then claimed that natural selection was an applicable concept only after the 'variation' had been established (see Maudsley, 1883, p. 137). Maudsley wanted to go farther than Darwin; he sought an explanation of the cause of the "organic start" and "its progressive increase" (Maudsley, 1883, p. 137). This lies, according to Maudsley, in the "inmost depths of physiology, in the most intimate physio-chemical processes that take place between the internal properties of the organism and the external stimuli of the environment, so that we must search for the origin of the initial variation and its growth by exercise" (Maudsley, 1883, p. 137). Maudsley was calling for a deeper study of the whole evolutionary process; unlike Tyndall and Huxley, he was not taking the polemical role, and unlike Hodgson, he refused to take Spencer as the starting point for his interpretation of mind. And perhaps most significantly, Maudsley most explicitly sought the starting point for all natural phenomena within physio-chemical processes. His view of causation was therefore both mechanical and reductionist.

The Translation of the Assumptions

Automaton theory was never systematically developed into a full-fledged psychological theory. Hodgson's Theory of practice was the most comprehensive presentation of the position, and one treatise does not constitute a paradigm or system. Maudsley was better known to his contemporaries, and to future thinkers, for his work in mental pathology, and this work eclipsed the 'automaton' elements of his theory.[41] Thus, the automaton theory is best described as a 'position' adopted because the physiological data was initially convincing and because it served dominant concerns of the science of the time. The positions of the pre-automatists (Bain, Spencer, Lewes, Carpenter) however, continued to exert an influence on the psychology that followed (for example, early American Functionalism). Later, the willingness to develop psychological theories which were unconcerned with consciousness (most striking is of course Watson's Behaviourism) perhaps indicates that the willingness to dispense with consciousness as the central motif of psychology is in part a legacy from the nineteenth century. If automaton theory was a non-sustainable position, the factors that facilitated its development must still be taken seriously.

The development of the automaton position is of critical importance in this dissertation for two reasons. First, it embodies the changes in meaning that took place in the common assumptions of the rationalist-empiricist tradition during the nineteenth century. Secondly, it was the automaton position that initially represented the climax of the psychological tradition to James, so that his

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41. See, for example, Hearnshaw's assessment of Maudsley's role in the history of psychology (Hearnshaw, 1964, pp. 27-29).

desire to construct a new world-view was predicated on his rejection of the late nineteenth century meanings of the common assumptions. It also provided some of the 'givens' for future psychological theories in that the pre-automatists and the automatists had turned psychology into an explicitly empirical science. Theories of mind from then on had to be substantiated by empirical data.

We see in this survey of the positions of the declared and near-automatists how the common factors of the rationalist-empiricist tradition were translated into neurophysiological terms, and how automaton theory was a major result of that translation. But the survey does not merely show the continuance of old assumptions in later theories: rather, their meaning and import were subtly but significantly changed. On a superficial level, the change is simply that as the assumptions of the philosophical tradition became fleshed out in empirical data they became more restricted and specific, less open to widely variant interpretations. But there is more to the process than empirical data bringing philosophical speculation to heel, curbing its excesses by ratifying some of its results and rejecting others. That was the interpretation of Tyndall and Huxley, but they were wrong. The data themselves were largely determined by the philosophical assumptions of the investigators. What the data were, what they said, was for this reason not crucial. What was crucial was that there <u>were</u> data, and that these data were relevant to the problems that had previously been discussed in speculative philosophical terms. It does not count against this point that the relevance was in part guaranteed by the data's being in part determined by the philosophy. That fact was simply a necessary condition to the data's being recognised as important. Had the data been unassimilable to the philosophical tradition, it would not have been

assimilated. In that case, since the theoretical views of the investigators were predominantly determined by the traditional currents of philosophical speculation, the data would not have been seen to have scientific relevance.[42]

The nature of the data, and hence their relevance to traditional topics of inquiry, was thus a consequence of the continuing influence of the philosophical tradition. The existence of the data, however, was not, and it was the fact that such data existed and could be further elaborated that changed the import of the philosophical assumptions. It did this in two ways. First, it tied theoretical interpretation to the process of data gathering, so that scientific attention was concentrated on those features of the organism most amenable to experimental manipulation. In this way the intellectualistic bias of the philosophical tradition was reversed and attention was focused on the lower cortical and spinal centres. The division between unitary higher centres and reflexological lower ones, it should be noted, was not initially challenged by this shift of emphasis. Second, it put the investigation of at least some aspects of the human mind on a par with all other scientific investgations. In this way it led to a naturalization of humans as objects in the world, suitable like any others for detailed scientific enquiry, so it served as a counterpart to the theoretical integration of man with the rest of animal nature in evolutionary theory. We

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42. See Boring, 1950, Chap. 8, for a discussion on the 'personal equation' in astronomy. The relevance of such studies to the psychology of individual differences could only be appreciated long after the fact. And as Young demonstrates (see Young, 1970), theories of cerebral localization were largely ignored in favour of a sensory-motor view coupled with the dictum that cerebral action was largely indivisible. The sensory-motor view dominated psychology not because it was 'truer' than the cerebral localization hypothesis but because it fitted the theories of the period better.

may now consider the details of the changes in the philosophical assumptions, principally those associated with mind-matter dualism on the one hand, and the status and function of knowledge on the other.

Mind-Body Dualism in the Conscious Automaton Theory

The 'naturalization' of the human mind that took place in the late nineteenth century can be described as a retreat of the traditional introspective epistemological approach of the mental philosophers in favour of the elaboration of an experimental, empirical, biological approach. The 'naturalization' of mental phenomena proceeded by means of a translation of concepts borrowed from mental philosophy and physics into biology. At the same time, many of the problems that faced psychologists, physiologists, and scientists regarding the relationship between mind and brain took their specific forms from the changed meaning of the common assumptions of mental philosophy. Tyndall and Clifford worried about the gap between neuronal functioning and the experience of consciousness. As Tyndall wrote: "Between molecular mechanics and consciousness is interposed a fissure over which the ladder of physical reasoning is incompetent to carry us" (Tyndall, 1879, p. 391). Tyndall and Clifford therefore advocated a 'parallelism' between brain events and the experience of consciousness, convinced that neither one could directly cause the other (see Clifford, quoted in James, 1890, 1, p. 131, and Tyndall, 1874/1879, p. 196).

While Hodgson, Huxley, and Maudsley argued that states of consciousness are caused by "molecular changes of the brain substance" (Huxley, 1874/1894, p. 244; see also Hodgson, 1870, 1. pp. 335-336, and

Maudsley, 1883, pp. 55, 116), their theories made a clear distinction between biological knowledge, and conscious knowledge, so that the solid Cartesian dualism between mind and matter was retained, in the case of Tyndall, at the ontological level, and in the case of the other theorists, at the epistemological level. The difference was that mind no longer seemed to have any necessary role to play. But this is a substantial, qualitative change, and this is where evolutionary premises become important. Darwin was concerned with strictly biological adaptation and did not incorporate a 'new' evolutionary paradigm of mind into his theory. Spencer did, so that his evolutionary associationism virtually defined the functions of mind within the new naturalistic approach.

As Young shows, Spencer's theory of mind is a mediation between the sensationism of the later empiricists and the nativism of the Cartesians. His biological theory of mind has it that "The effects of associations are supposed to be transmitted as modifications of the nervous system" (Young, 1970, p. 172). Knowledge is described in biological terms and it is on biological grounds that Spencer closes the gap between the rationalist and empiricist positions regarding the genesis of ideas; heredity is the means used to account for specific ideation and individual differences (see Young, 1970, p. 180). Mind is important in evolutionary terms because it is the conscious repository of inherited experience and the means through which outer impressions made upon the inner relations are known. Spencer's system is continuous and hierarchical so that there is no definite demarcation between neuronal and conscious experience,and he goes through considerable analysis to make this explicit (see Spencer, 1870, 1, pp. 148-152; see also Young, 1970, p. 172).

But the ingrained dualism of the philosophical and scientific traditions was too strong to allow the fundamental distinction between mind and matter to be overcome through a simple 'blunting' of the differences between them. And Spencer himself advanced the psychophysical parallelist position (see Spencer, 1870, 1, pp. 154-155; Young, 1970, pp. 96, 246; and Smith, 1970, p. 242). The parallelism which characterizes the automaton position would therefore appear to confirm the mind-body dualism which was made explicit in the earlier phase of mental philosophy. But the 'knowledge function' of mind has been redefined in the new psychology, and this is what enables us to consider the theories of Huxley, Tyndall, Clifford, Hodgson, and Maudsley together within the 'general' category of automaton theory. The mind still has the function of knowing the world. But this 'knowing' is no longer connected with any efficacious activity on the part of mind. Actions are initiated and executed through the machinery of the nervous system. Mind and brain run parallel courses so that the mind knows the stimulus and the mind knows the response but does not intervene to select or instigate the response. Thus the knowledge function of mind is of secondary importance because mind now has the explicit status of a passive onlooker not only of the world, but even of the brain; mental experience, feeling, sensation, etc. are real but have no causative functions.

Knowledge, in the adaptive sense, is impressed upon the nervous system itself which is active and reactive. We therefore have a paradigm wherein two types of knowledge processes are implied; the first type of knowledge is that which appears in consciousness, now divorced from any meaningful role in the production of activity and describable in the traditional associative or faculty psychology terms. The second type of knowledge is biological, or 'unconscious'

knowledge, now contained in the patterning of the nerve atoms themselves, and describable according to 'biological' laws of mechanics.

Tyndall's parallelist account of consciousness and its relation to the body supports the conclusion that there are two kinds of knowledge in the new paradigm (see Tyndall, 1877/1879, pp. 353-359). At the same time, Tyndall's 'positivism' makes his exact position regarding the status of consciousness somewhat difficult to assess. While he is quite definite in pointing out that psychical events cannot cause physical events (in light of analogies from the physical sciences), he is equally concerned with making it clear that there is no reason to assume that the opposite case is true either--that is, physical events cannot produce consciousness (see Tyndall, 1877/1879, pp. 358-359, and 1879, pp. 410-411). Tyndall is thus forced to conclude that the relation between mind and body is a 'mystery' (see Tyndall, 1877/1879, p. 358, and 1879, pp. 410-411). Obviously, he says, "We can form a coherent picture of the physical processes--the stirring of the brain, the thrilling of the nerves, the discharging of the muscles, and all the subsequent mechanical motions of the organism" (Tyndall, 1877/1879, p. 358). But this is as far as we can go. Tyndall briefly discusses the relationship between the muscles, the sensory-motor nerves and the brain as an information and 'work' system (see Tyndall, 1877/1879, pp. 352-353). And Tyndall is quite clear that consciousness has a distinct knowledge function: consciousness enables us to know and experience the world (see Tyndall, 1877/1879, p. 359). Somehow, then, mind and body are related in such a way as to facilitate conscious knowledge of an external world. At the same time, the activity carried out by the individual is not dependent upon consciousness. The individual 'knows' and he 'reacts' but the two processes occur simultaneously. There is no

causal connection that can be defined between them.

The two types of knowledge are more clearly defined by Hodgson, Huxley, and Maudsley. These three were not parallelists: they believed that the physical changes in the nervous system 'caused' or 'produced' the phenomena of consciousness (see Hodgson, 1870, 1, pp. 335-336; Huxley, 1874/1894, p. 244; and Maudsley, 1883, pp. 55, 116). They discuss the changes in the structure of the molecules of the nervous system that take place when stimuli are received. Memory patterns are etched into the nerve molecules and the reactivity of the nervous system changes according to the nature of these paths. Maudsley describes the 'biological knowledge' as 'unconscious' knowledge and writes:

> the so-called intelligent design and execution of an act neither implies the existence of a pre-designing consciousness nor requires the intervention of any extra-physical agency in the individual organism;...they [instincts and reflexes] are examples of what the body can do by itself in virtue of its constitution as a complex organic mechanism. The unconscious is the fundamental and active element, the conscious the concomitant and indicative (Maudsley, 1883, p. 85).

Hodgson had earlier taken the same position regarding 'biological' knowledge:

> But, in speaking of nerve movements as the cause of conscious states, it must not be forgotten that every such movement takes place only at the expense of some waste of the living nervous substance, and that this waste is repaired by a new growth in which the habit of movement in the old way is strengthened, so that the oftener a movement has been repeated the more easily is it repeated again. Every movement which has once taken place becomes thus represented by a perhaps very minute change in the structure of the nervous substance, which grows with exercise; and every movement may thus, conceivably at least, be capable of reawakening on the occurrence of an appropriate stimulus (Hodgson, 1870, 1, p. 350).

Huxley makes the same point:

> That memory is dependent upon some condition of the brain is a fact established by many considerations--among the

> most important of which are the remarkable phenomena of aphasia. And that the condition of the brain on which memory depends, is largely determined by the repeated occurrence of that condition of its molecules, which gives rise to the idea of the thing remembered, is no less certain (Huxley, 1874/1894, p. 214; see also pp. 215-216, 225-226).

Biological knowledge forms the basis for conscious knowledge of the world. As Maudsley says, movement is engendered within the 'unconscious' nervous system; consciousness 'knows' what has taken place. Hodgson makes the same point (see Hodgson, 1870, pp. 338-339). The two types of knowledge complement each other: consciousness reflects nervous activity and the external world; the nervous system, on the other hand, is patterned so as to act 'purposively'. The individual therefore survives in the world consciousness knows.

The role of knowledge has been steadily undergoing a kind of metamorphosis; as Marcell shows (see Marcell, 1974, pp. 53-54), rationalists and empiricists alike traditionally believed that the human mind was capable of discovering the laws of the universe. The capacity to reason and thereby discover universal laws as Newton, Galileo, and Kepler had done defined man's place in the cosmos. Gradually, through the use of his rational power, man would fully comprehend the workings of the universe; progress could be defined as the continuous process of discovery. And this progress relied upon the use of man's active reasoning powers. This link between the powers of human reason, exemplified by scientific discoveries, and the expectation of unlimited progress in all human affairs, was made explicit by Condorcet and other eighteenth century Enlightenment philosophers (see Manuel, 1962, pp. 62-92). But the importance that was given to physiological data and the successes of evolutionary theory changed the emphasis of epistemological speculation. The biological, adaptive side of man's nature was 'discovered' to be of

profound significance. This 'second' side of man's nature had been recognized in both streams of the philosophical tradition but in a somewhat different context. The rationalists made a strict distinction between the rational and automatic functions while the empiricists based the beginnings of knowledge in sensation, and built up the structure of mind from there. But the empiricists originally granted the mind certain 'powers' to account for the compounding of ideas, so that the mind was not a simple 'receptacle' for sensations. While the tendency of empiricist thought from Locke to James Mill was to minimize any such active powers of the mind, the agreed functional and epistemological significance of the mind's activity provided a continuing check to the attempts at constructing a thoroughgoing passive sensationist account of the mind's operations. Furthermore, both philosophical streams used mechanical analogies to describe the 'lower' processes so that Descartes' theory of animal spirits was used by Locke who described sensation as the movement of animal spirits (see Locke, 1690/1964, Bk. 2, VIII, 12, p. 133), while Hobbes wrote that "Desires and aversions are motions toward and motions away from objects" (Peters, 1962, p. 381). The concept of mind, handed down within the rationalist-empiricist tradition, was already based on a duality of function and the distinction between 'rational' and 'animal' processes was an integral part of the philosophical tradition. Physiological and evolutionary theories did not change this basic separation of faculties. What they did do was to redefine the 'knowledge' function of both aspects of mind. Conscious knowledge no longer had any functional significance, so that there was nothing to impede its purely passive nature. The 'passive organism' model of sensationist empiricism was free to become epiphenomenalism. On the other hand, the lower 'animal' functions

had their role vastly increased, so as to incorporate all functionally significant, adaptive knowledge. In this way, again, the intellectualist bias of the philosophical tradition was reversed.

Changes in the Meaning of the Assumption that Mind could be Described in Mechanical Terms

Traditionally, mechanical analogies of sensation and perception were found throughout mental philosophy; when physiologists began to investigate the nervous system these analogies were translated into empirical data. The strength of the mechanistic approach must not be underrated; it was an integral part of all theoretical and scientific endeavours including evolutionary theory.[43] The development of the sensory-motor view, and the corresponding reflexology, is directly related to the strength of mechanism in nineteenth century paradigms. As Young points out, physiologists tended to neglect research which indicated that 'psychological' and motor functions were localized in the cortex and to concentrate on elaborating the sensory-motor view of the nervous system (see Young, 1970, pp. 226-227). The empirical evidence for cerebral localization was incompatible with the associationist sensory-motor model of psychology with its roots in empiricist philosophy and its 'realization' in the works of Bain and his contemporaries (see Young, 1970, p. 224).

The mechanical analogy was confined, in the Cartesian tradition, to the 'lower' mental processes. It was therefore logical for physiologists to begin their search for the physical correlates of

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43. See Darwin, 1859/1977, pp. 173-204. Darwin attempted to develop a systematic account of natural selection which took place according to the laws of variation and was not, he stated, a fortuitous occurrence. Thus, he was intent on developing a lawful, mechanistic, explanation of natural events.

mind in the lower regions of the nervous system. The cortex was then left free to act as a qualitatively distinct site for the higher mental faculties, to wit, reason and will. As Hearnshaw points out, the whole sensory-motor concept originated as a mechanical description of the lower centres which circumvents the cortex (see Hearnshaw, 1964, p. 71); the mechanical description was supported of course by the empirical discoveries of Bell and Magendie. The Bell-Magendie discovery was hailed as a major achievement because it fulfilled the demands of the emerging psychology so perfectly. First of all, it was an empirical discovery so that it fulfilled methodological criteria. Secondly, it provided an 'automatic' description of nervous functioning which left the cortex untouched, thereby satisfying philosophical criteria. As such, it served as the foundation for the reflexology which characterized the psychology of Bain, Spencer, and Carpenter. Laycock was the first thinker to extend the reflex paradigm to the cortex in 1837; his achievement went unrecognized by many of his contemporaries (see Hearnshaw, 1964, p. 23), and it was not until the 1860's that Jackson postulated that a motor cortex must exist; shortly after that, his theory was substantiated by the researches of Fritsch and Hitzig in 1870, and Ferrier in 1873 (see Young, 1970, pp. 224, 235; and Hearnshaw, 1964, p. 71).

There are several points to be made here; first, the difference in response that greeted the Bell-Magendie law and the cerebral localization data is significant. The sensory-motor distinction was immediately hailed as a great discovery and theorists began building a theory of action (reflexology) upon it (see Young, 1970, p. 79). The 'theoretical' advocates of cerebral localization were not well received by the scientific community and the discoveries of motor

areas of the cortex, although accepted (accepted because they were empirical discoveries in the accepted sense and thus could not be denied) were greeted with less enthusiasm.[44] Scholars (such as Carpenter, for example) found themselves in the position of having to revise their notions of consciousness and its function to take account of these whilst the Bell-Magendie discoveries found an immediate place in science and psychology.

The Bell-Magendie discoveries initiated a simple translation of epistemological notions into biological terms without disrupting the philosophical or scientific tradition. The discoveries of motor areas in the cerebral cortex had graver implications and were a serious 'anomaly' in a tradition that had been strengthened by previous empirical discoveries.

It is vital to recognize that the sensory-motor, reflex paradigm was not without anthropomorphic overtones, and it was these overtones which allowed the eventual integration of cerebral localization data into psychology. Smith discusses the concept of 'force' as it was used in physics and psychology to account for attractions and repulsions and the activity of the nervous system. According to Smith, the 'force' was defined in a combined metaphysical and scientific sense, neither wholly one nor the other. The notion of force linked the two ontologically divided strata of matter and mental phenomena, or matter, and 'God'. The notion of 'force' was used as a teleological explanation to account for the 'purposive'

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44. See Young, 1970, p. 234. Furthermore, Jackson put forth his theory of cerebral localization on the basis of observations made on insane and epileptic patients (observations which were later physiologically verified--but not by Jackson), but the criteria of evidence had not been sufficiently 'broadened' at this stage to admit his observations as evidence.

behaviour that nervous activity seemed to exhibit. The concept of force must be described as anthropomorphic because of its teleological usage in the hard sciences and in physiology. The matter of the nervous system was given a correspondent status to all other matter in the physical universe; at the same time, conciousness was not used as a means of describing the teleological activity of organisms. The purposiveness was a property of the organized matter itself. Organisms were a priori purposive, and this interpretation of nervous activity was well suited to the evolutionary view as it emerged in Darwin's and Spencer's writings.[45]

The concept of force appears in the automatist writings. Huxley, deeply committed to the principle of the uniformity of nature, used the concept to account for the essential reactivity of matter, and extended his analogy to include mental phenomena as well.'Force' is the unifying concept which is used to make the doctrine of the uniformity of nature coherent and comprehensive. Huxley writes:

> But if, as I have endeavoured to prove to you, their protoplasm is essentially identical with, and most readily converted into, that of any animal, I can discover no logical halting-place between the admission that such is the case, and the further concession that all vital action may, with equal propriety, be said to be the result of the molecular forces of the protoplasm which displays it. And if so, it must be true, in the same sense and to the same extent, that the thoughts to which I am now giving utterance, and your thoughts regarding them, are the expression of molecular changes in that matter of life which is the source of our other vital phenomena (Huxley, 1868/1894, p. 154).

Tyndall unites the organic and the inorganic through the concept of force although he denies that this force is the same as the 'vital force' earlier posited to explain life: "The matter of the human

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45. Smith details the anthropomorphic nature of the concept of force as it was used in physics and mental philosophy (see Smith, 1970, pp. 131-150, 225-240).

body is the same as that of the world around us; and here we find the forces of the human body identical with those of inorganic nature" (Tyndall, 1877/1879, p. 350). He specifically distinguishes between matter and force so that describing the digestive process he says:

> We place, then, food in our stomachs as so much combustible matter. It is first dissolved by purely chemical processes, and the nutritive fluid is poured into the blood. Here it comes into contract with atmospheric oxygen admitted by the lungs. It unites with the oxygen as wood or coal might unite with it in a furnace. The matter-products of the union, if I may use the term, are the same in both cases, viz. carbonic acid and water. The force-products are also the same--heat within the body, or heat and work outside the body. Thus far every action of the organism belongs to the domain of either physics or chemistry (Tyndall, 1877/1879, p. 352).

But the question of psychical causes of activity is then raised, and Tyndall, true to his positivistic parallelism says that the will does not directly instigate activity but rather mediates action through the physical nervous system. The brain is the seat of 'government' as it were, and appears sufficient as an organ to 'comprehend' and instigate sensory-motor actions so that activity can be viewed scientifically according to the laws of mechanics (see Tyndall, 1877/1879, pp. 352-353). At the same time, he makes a careful distinction between the role of mental processes--in the traditional sense of 'soul' or ego--in instigating acts and the physical processes, conceived in terms of mechanical laws: Tyndall was convinced that psychical faculties could not cause physical reactions. In Tyndall's writings, then, the uniformity of nature is not completely guaranteed by the concept of force. He does, however, utilize the concept of force to 'explain' the activities of all those processes --organic and inorganic--which can be mechanically described.

Hodgson's use of the concept of force is more akin to Huxley's.

Consciousness is a product of the 'forces' or 'motions' of nerve molecules. Or, as Hodgson writes:

> The various forces in nature are held to be cases of such action and reaction; the mechanical, the chemical, the physical, the vital, forces are all held to be modes of change in the relations of atoms, molecules, or masses, to each other. One kind of visible and tangible matter, nerve substance, which is one of the seats of vital forces, or the motions in which are some mode or modes of life, is also the seat of sensation or consciousness, and the motions in it are followed by consciousness. The more finely organized this nerve substance is, and the more minutely complex, interdependent, and individualized, its motions are, so much the more complex and organic is the system of states of consciousness which arises from them (Hodgson, 1870, 1, p. 337).

The anthropomorphic character of reflexology was instrumental in smoothing the way for a reflex view of cortical activity, because it allowed the mechanistic analogy to be translated into biological terms. The anthropomorphic character of the concept of force as it was used in reflexology also makes it possible to describe knowledge in biological terms. Though nervous processes were certainly unconscious, they were not lacking in <u>purpose</u>. It is this notion that allows Maudsley to speculate that the absence of consciousness would make little difference to human activity. With the extension of the sensory-motor theory to the cerebral cortex, the emergence of an automaton theory of mind was virtually guaranteed.

So what happens to all of the old structures that were traditionally used to discuss mental processes? Spencer has the answer: the classification of mental events:

> can be but superficially true. Instinct, Reason, Perception, Conception, Memory, Imagination, Feeling, Will, etc., etc., can be nothing more than either conventional groupings of the correspondences; or subordinate divisions among the various operations which are instrumental in effecting the correspondences. However widely contrasted they may seem, these various forms of intelligence cannot be anything else than either particular modes in which the adjustment of inner to outer relations is achieved; or particular parts of the process of adjustment (Spencer, 1855, p.486, quoted in Young, 1970, p. 181).

The conventional names are retained for conscious processes but the efficacy of these processes, as they had been categorized within mental philosophy, has been shorn from them. As Young remarks, Spencer had concluded that "Both memory and reasoned action tend to lapse into automatism" (Young, 1970, p. 180). The automatists followed Spencer and consciousness was still described in 'traditional' terms. This is shown in the first chapter of Hodgson's Theory of practice. He intends, he says, to examine the material nature of the feelings; at the same time, Hodgson describes the feelings according to traditional categories. Thus, Hodgson says, the modes of feeling include sensations, emotions, passions, desires, pleasures, pains, efforts, volitions, and actions (see Hodgson, 1870, 1, pp. 4-5). Later, Hodgson discusses the relationship between the parts of the nervous system and the corresponding conscious experiences which are evoked when the system is differentially aroused. Consciousness is divided into the traditional faculties: these include memory, perception, imagination, reasoning, and volition (see Hodgson, 1870, 1, pp. 355-356).

Maudsley, as well, describes consciousness in the traditional categories of memory, reason, imagination, perception and will (see Maudsley, 1883, pp. v, 71-86, for example). At the same time he sees these faculties as having little importance in the new psychology:

> When we experience a state of consciousness that we are not able to refer to an exciting cause, as we refer the sensation of sound to the external body, we invent a faculty as the cause of it; for example, when we feel an emotion, we are conscious of no material cause of it, and we accordingly imagine an emotional faculty as part of the furniture of mind, as we in like manner refer an outcoming volition to a faculty of will. All the while there are perhaps sufficient physical antecedents of the emotion and will in the states of the internal organs of the body that are hidden from us; but having no perceptions of these organic affections, we please ourselves with the

> mental faculties which we create and put in their places (Maudsley, 1883, p. 73).

In Maudsley's view, the faculties of mind are pure inventions which we substitute for the proper physical explanations.

In summary, the automaton theorists were not concerned with reconceptualizing consciousness, but rather with minimizing its status. Because the real, or causal events took place in the subconscious regions of the nervous system, the actual forms of the 'display' of events in consciousness was not particularly important. The traditional faculties were retained, and man 'knew' the world in the same way as he had in 'pre-physiological' times. But like Cassandra in the ancient myth, the conscious mind could not affect the world with its knowledge. Human action was fully constrained, in the one case by a fatalism, in the other by a biological determinism.

Essentially therefore, the shift to a biological account of knowledge was a shifting of the status of the concept of mechanism facilitated by the anthropomorphic character of mechanical forces as they were defined in science and natural theology. Whereas it had been used as an analogy in the earlier psychology, it was now used to describe the biological 'laws' of the nervous system so that mechanism attained the same reified status in psychology that it had in the natural sciences.

The 'Atomic' Theory of Mind

The shift in meaning of the mechanical theory of mind was accompanied by a shift in the status of the elementaristic analogies that were a part of mental philosophy. The elementaristic 'units' of nature (chemical and atomic 'particles') were correlated with concepts about the nature of ideas by the empiricist philosophers--

the Cartesians retained a unitary concept of mind. By the time physiologists were investigating nervous activity, mental philosphy, particularly in the hands of the Mills, had reached a state where the units of thought and the complex ideas themselves were highly 'artificial', and had strong correlations with 'atomic' theories in physics and chemistry. Complex ideas were compounded out of simple ideas so that the Millian theory of mind was essentially elementaristic. Ideas were products of the mind (see J.S. Mill, 1843/1974, Bk. VI, Chap. IV, 3, pp. 853-854). It is difficult to see how these ideas could be directly related to active experiences in the world. The function of ideation within the Newtonian world was, ultimately, understanding and contemplation of the world as described by Newton's laws. Ideas as such were not studied as the means whereby the individual adjusted himself to the demands of reality and the result was that passive sensationism seemed to be an implicit, if not explicit, component of mental philosophy by the mid-nineteenth century. As matter was the end product of the chemical bonding between atoms, so the contents of the mind were the end products of the combination of simple elements, or simple ideas.

Thus, the minimization of the role of ideation in the promotion of activity is not simply the result of physiological investigation. When physiologists and mental philosophers (Carpenter and Bain, for example), made activity 'physiological' they were following the implications of mental philosophy, as well as science.

Mechanism and elementarism went hand in hand in the nineteenth century. The activity of the nervous system could be described in reductionist or elementaristic terms because the 'fiat' for such an analysis existed in the physical sciences and in the tradition of mental philosophy. Thus it happened that the meaning of the

reductionist account of mentality shifted from an analogue in mental philosophy--borrowed from the physical sciences--to an 'empirical' biological description of what 'really' takes place in the nervous system of the thinking individual. In short, as it was with the mechanical description of mental processes, so it was with the units of which they were composed. What was originally an analogy, taken from the models of physical science, became a purportedly literal, true, description of the workings of the brain, based on the application of those models to neurophysiological processes. Late nineteenth century models of mind are dominated by this reductionist biological approach and the parallelist theories of mind and matter, generally adhered to by the 'automaton' theorists, provide the most radical accounts of biological atomism. Earlier on, Bain cited Du Bois Reymond's conclusion that:

> 'Every minute particle of the nerves and the muscles must be supposed to act according to the same law as the whole nerve or muscle.' The total currents are in fact, the combined effect of these currents circulating round the ultimate particles (Bain, 1868, p. 49).

And Spencer described sensation in atomistic, reductionist terms (see Spencer, 1870, 1, pp. 148-153) while Carpenter had also followed Du Bois Reymond, and wrote: "The 'nervous current', like the muscular, must be considered as derived from the electromotive action of the molecules of the nerve" (Carpenter, 1855, p. 430). From here, Carpenter went on to build his system of reflex action, describing the complexes of nerve fibres which 'initiate' muscular activity. The point is that 'molecules of the nerve' were taken to have a real empirical meaning, unlike Hartley's vibrations or Descartes' animal spirits (see Huxley, 1868/1894, pp. 153-154; Tyndall, 1879, pp. 390-391; Hodgson, 1870, 1, pp. 337-338; and Maudsley, 1883, pp. 102-104).

The 'activated' molecules of the nervous system were now correlated with the rest of the material world. They were real substance, and as such, were logically distinguished from mental events. The mind-body distinction was now of renewed importance, largely because of the successes of evolutionary theory. The atomistic, biological nervous system fitted in with evolutionary postulates for it was amenable to material changes and these changes or powers of development could be described biologically. The biological description of nervous molecules carried the same anthropomorphic overtones that characterized the overall mechanistic approach. The character of the whole nerve and the molecules which composed it were essentially the same so that molecular actions were additive. But what to do with mind itself? Causation was discussed at the atomic level and it was deemed impossible by Tyndall, Hodgson, Maudsley, and Clifford that mental events could 'cause' physical events or vice versa.

The existence of mind had been made subject to the existence of currents in the brain by Bain, Carpenter, and Spencer. The automaton theorists, less concerned with preserving any notion of a causal relationship between brain states and mental events, found it more 'scientifically rational' to reaffirm the mind-body distinction, in hopes of creating a systematically scientific account of functions once ascribed to mind and now describable in atomistic, mechanistic, biological terms. As the writings of Huxley and Tyndall in particular demonstrate, their main concern was to chart the progress of scientific discovery, showing in some detail, that the contribution of science and biology, supported by theoretical postulates gleaned from philosophy, were sufficient to guarantee the uniformity of nature. Again, therefore, 'knowledge' becomes a function of the physical

nervous system and that 'knowledge' resides in the molecules of the nervous tissue (see Maudsley, 1883, p. 116; Hodgson, 1880, 1, p. 350; and Huxley, 1874/1894, pp. 214-216).

The Distinction Between Human and Animal Minds

The ontological distinction between human and animal minds, elaborated by Descartes, was a commonplace assumption throughout the Newtonian era until the time when serious physiological investigations were carried out on the nervous systems of animals. The empiricist distinction between 'higher' and 'lower' aspects of 'mental' activity allowed physiological data, generated by animal research, to be applied to human faculties without radically upsetting the relationship between science and philosophy. And for the automatists, the question of a possible relationship between human and animal minds was settled by evolutionary theory. Evolutionary theory described a relationship between man and the rest of the animal world; man had evolved along with the other species. Furthermore, the development of 'reflexology' was compatible with a view of some kind of psychological continuity between animal and human minds (see Carpenter, 1855, pp. 436-441; Maudsley, 1883, pp. 112-117; and Huxley, 1874/1894, pp. 239-243).

The problem lay in deciding how man's volitional and reasoning abilities could be dealt with in an evolutionary paradigm. Man's special place in nature was endangered by evolutionary theory, and it was this special place, rather than the biological 'underpinnings' of his behaviour, that troubled many theorists. At the same time, science was becoming overtly positivistic and theorists agreed that questions concerning the possibility of free will were not scientific questions. Carpenter's belief in free will was sustained by his

theological commitments and his introspective experiences, rather than by any scientific evidence. Huxley settled the question for himself by concluding that freedom consists in following the predetermined impulses without impediment (see Huxley, 1874/1894, p. 241), and Maudsley, like so many 'psychiatric' practitioners of the time, used data gleaned from observations of mental patients to conclude that free will is the illusory product of other determinable factors (see Maudsley, 1883, p. 10). The notion of free will, as Spencer wrote, was agreed to be antagonistic to science.

If man was separable from the beasts, he could not, according to the automatists, be given a special place in nature just because he displayed volition. Man's experiences of choice, or volition, are not denied in post-Darwinian psychology. But they are reduced to non-efficacious phenomena. The structure of mind and the essential differences between animals and humans have not essentially changed, but the meaning of the distinction has undergone a change. In the new paradigm, human and animal minds are both to be treated at the biological level, and while the possession of consciousness may still distinguish man from beast, that consciousness is no longer seen as productive or efficacious, so that the distinction lacks any functional or scientific significance.

Motivation, Emotion, Innate Ideas, and Instincts

Until the mid-nineteenth century the 'faculties' of motivation and emotion had generally been subordinated to the structures of reason (see above, p. 26). As mental philosophy was 'translated' into physiology and as evolutionary theory gained converts, motivation and emotion became more critical areas of interest (see Peters, 1962, pp. 651-655). The first attempt at a systematic biological theory

of motivation was based on the doctrine of psychological hedonism: the doctrine proclaimed that man acted to achieve pleasure and to avoid pain. And this was readily enough translated into a sufficient theory to explain the differential adjustments made by men in the world--it seemed to explain human activity without the need to appeal to the reasoning processes. The lack of an established tradition of social psychology or individual differences, or, the common assumption that one 'universalized' individual could serve as the prototype for mankind, made it possible for early investigators to believe that adjustment behaviour was governed by lawful universal postulates such as psychological hedonism implied. Such a theory of motivation quite logically predisposed later theorists to accept evolutionary premises and at the same time to minimize the role of consciousness in making decisions or choices. Bain, Spencer, and Carpenter all incorporated psychological hedonism into their theories as a means of explaining desires or motives. They described it in neurophysiological terms so that the doctrine of motivation changed from a philosophical conception into a physiological paradigm. The main difference between these thinkers and their philosophical predecessors lay in the importance they accorded the subjects of motivation and emotion. Why an organism did this and not that, reacted with this emotion and not that were important in an evolutionary paradigm. Motivation and emotion were now important topics in the new psychology.

Concurrent with the elevated 'status' of motivation and emotion as subjects for discourse was the translation of innate ideas or predispositions towards ideas or activities into instincts. While Descartes insisted that the mind at least had tendencies towards certain ideas the empiricists had tended to push sensation as the

foundation of all ideation. But the distinction between the two schools was not quite so clear-cut. If Locke insisted that sensation was the basis for ideation, he also maintained that the mind had certain powers of organizing the input it received. The mind was a tabula rasa in terms of content but not in terms of operational structures (see Locke, 1690/1964, Bk. 2, II, 1-2, p. 99; and Bk. 2, XII, 1-2, pp. 132-133).

Within both streams of the rationalist-empiricist tradition there was agreement on the issue of whether or not the mind had a role to play in the production of abstract, complex, or metaphysical ideas. It did. The differences came in the nature of the structures of mind and their relations to the other 'lower' mental faculties. The concept that innate tendencies governed the highest levels of human functioning is to be found in both strands of the tradition. Descartes viewed the passions or emotions as volitions which come from, or are produced by, the soul and controlled by the will (see Peters, 1962, p. 369). According to Locke, events were accounted good or evil according to their pleasure or pain producing proclivities. The pleasure-pain tendencies or passions are described as internal sensations and the actions connected with them are governed by the will, so that will could override desire (see Locke, 1690/1964, Bk. 2, XX, 1-17, pp. 159-161; and Bk. 2, XXI, 25-35, pp. 171-173). In both systems desires and passions were recognized and in both, the will acted to regulate their expression. Thus, the mental philosophy included a fairly comprehensive internal structure for the mechanisms of activity. If the mind of the organism was dependent on sensation to a greater or lesser degree for knowledge, the individual was still organized in specific ways to deal with incoming sensation. In the late nineteenth century, this internal 'mentalistic' organization

was further defined and reassessed in biological terms: thus, in evolutionary theory, reactive or releasing mechanisms came to be described as instincts. That the individual had certain specific inborn tendencies to behave in particular ways can be seen as a 'naturalization' or 'biologification' of the structures of mental philosophy.

On the other hand, by the mid-nineteenth century, the 'Cartesian' elements in Locke's empiricism had been minimized. Condillac, in particular, claimed in 1754 that instincts were actually habits once derived from sensations and these habits appeared as 'instincts' because the individual had stopped reflecting upon the sensations which gave rise to them. J.S. Mill, adopting a less extreme sensationism admitted that instincts existed and that their presence could not be explained within the associationist model (see Young, 1970, pp. 176-177). Young shows that Gall, Cuvier, and Mueller recognized the correlation between the concepts of innate ideas and instincts. He adds that it was this connection which made the notion of instinct "the traditional enemy of evolution and association" (Young, 1970, p. 176, see also p. 174).

Bain, having reinterpreted mental life as essentially active, was better able to cope with the notion of instinct so that in his system, the will provided the stimulus for particular activities but the exhibition of complex activity depended upon the natural endowments of the system. These 'natural endowments' could in turn, be analyzed in terms of the 'smaller' units of reflexes and feelings; thus Bain incorporated 'instincts' into his psychology without introducing extra-mentalism or innate ideation (see Bain, 1868, pp. 246-247).

Spencer, determined on a passive organism model, declared that when an external stimulation produced a combination of contractions (or a more complex or 'developed' reflex action), an 'instinctive' response could be said to have taken place (see Spencer, 1870, 1, p. 434). Instincts had to be distinguished from simple reflex actions because of the automatic and unconscious character of simple reflex actions such as heart beat. Instincts were sometimes accompanied by consciousness and they were specifically elicited by external factors (see Spencer, 1870, 1, pp. 434-435).

Darwin, of course, disputed the correlation of instincts with habits and reflexes and defined them as actions which are performed by members of a species, without previous experience, and which would appear to require experience for their implementation (see Darwin, 1859/1977, p. 234. Young (1970, p. 177), records Darwin's disagreements with Bain and Mill).

In the end, Darwin's view prevailed. It was not too long before a proliferation of 'instinct theories' replaced the traditional psychological hedonism of the earlier period.[45] And the ease with which Darwin's instinct hypothesis found acceptance was in part due to its fit with rationalist and early empiricist views on mental structures and innate ideas. Because the 'mentalistic' instincts were 'surrounded' by a biological system, they tended to be translated into biological or physiological terms, somehow divorced from the other mental systems. Thus, for many theorists, the instincts became teleological units of behaviour, just as, for a later generation of psychologists, 'drive' came to have the same teleological

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45. See for example, James' theory of instinct in James, 1890, 2, pp. 383-441, and his refutation of psychological hedonism in James, 1890, 2, pp. 549-559.

import (see Herrnstein, 1972, pp. 23-52). The 'biologification' of mental philosophy did not merely mean that physiological factors were given responsibility for ideation. It meant that 'innate ideas' or 'mental events'--that is, events traditionally given over to the province of mental philosophy--were transferred to biology.

Conclusions

All of the changes in meaning discussed can be categorized as shifts from what Smith (see Smith, 1970, p. 40) calls the introspective approach, to a biological approach to 'mental activity'. The transition was effected over a period of about 65 years and went through several stages, culminating in an automaton theory of mind. The essential factors in this transion took place so that new meanings were derived for the 'common assumptions' about consciousness while the structures of consciousness themselves were not changed. The function of consciousness changed, so that the pre-physiological conceptions concentrated on the capacity of mind to 'know' the world, and to effect progressive enlightenment about the cosmos through the growth of 'discovered' knowledge. Gradually, the function of 'knowing' the world in a meaningful sense was transferred to the nervous system, for the nervous system was the seat of both received input from the environment, and output into the environment. A kind of biological associationism was developed which described habit formation, volitional activity, and patterns of reasoning. Consciousness became the 'expression' of this underlying activity, although how molecular events were translated into conscious ideas or thoughts remained problematical for the automatists and they argued that the dilemma could not be resolved.

Consciousness was still described according to the laws of association; a reconstruction of the basic postulates describing the structures of consciousness was not undertaken until James began work on what was to become the Principles of psychology in 1878. And in 1878, James was still in the polemical phase of his career, arguing simply that evolutionary theory demanded an efficacious view of consciousness. The advent of evolutionary theory at first (through Spencer) supported the biologification of the rationalist-empiricist tradition. If consciousness had any purpose in the new paradigm that purpose lay in acting as a 'voice' for the unconscious neuro-physiological workings of the nervous system. The early polemicists of evolutionary theory--Huxley, Tyndall, and Clfford, for example, were not concerned with finding a functional place for consciousness in the new paradigm. That consciousness may have continued to evolve because it was useful in facilitating survival was not a concept that initially emerged with the promulgation of evolutionary theory.[46]

That a functional concept of consciousness took some time to emerge can be explained by the 'artificiality' of mind as it grew in rationalist-empiricist philosophy. The point has already been made that ideas, in the Millian context, bore little relation to everyday experience; the mind was a passive recipient of information which was combined according to the universal laws of association. The mind could know the world, but there is little in pre-evolutionary psychology that shows the mind as an effector of adaptive

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46. Spencer is of course somewhat of an exception to this statement, but it has been shown that the consciousness that Spencer constructed was entirely dependent upon the underlying physical processes and served to reflect those processes for the individual.

responses, nor as an instrument of change in the external world. The regulative processes were ascribed to the lower faculties which were in turn described according to mechanistic and elementaristic analogies.

The physiological data had the effect of confirming one possible variant of this construction. As we have seen, the data were not relevant primarily as new discoveries, for they were generated within the rationalist-empiricist tradition. But the thrust of physiological experimentation shifted the emphasis of interpretation. While the concept of activity was given a central place in psychological theory by Bain, the concept was applied, not to mental processes themselves, but to the nervous tissue. As physiological research progressed and discoveries were made of motor areas in the cortex, the concept of activity was applied ever more stringently and in more and more detail to neurophysiological events.

The automaton theory of consciousness is thus the climax of a long tradition of mental philosophy in complex interaction with experimental physiology. Hartley and the Mills, in particular, provide anticipation of some of its tenets, but only in rough outline. The details of the theory and its implications for traditional philosophical views, stemmed from the process of the interaction. The philosophical tradition selectively legitimated, and provided the context for the interpretation of, physiological data; the attention given to the data forced a redistribution of the relative emphasis accorded the different themes in the philosophical tradition. Thus, while the elements of the automaton theory can be traced to earlier philosophical speculation, the way they were put together cannot. The way the elements were put together and given differential importance led in turn, to a reformulation of the nature of mind and knowledge such

as could not have commanded allegiance previously.

James, Renouvier, Darwin, and the Newtonian World-View: Hypotheses

The optimistic, scientifically-uniform world-view, summarized by men like Huxley and Tyndall, was James' immediate inheritance. His early determination to enter science, his defence of evolutionary theory, and his willingness to concede that consciousness was the product of neurophysiological activity, place him firmly within the late nineteenth century framework. But we left James foundering in his neurasthenic despair because (unlike Huxley, Clifford, and Tyndall) James did not find that the assimilation of the biological and physical sciences with the promise of a comprehensive view of reality was a sufficient compensation for the loss of an efficacious consciousness. As soon as he allowed that we must be conscious automata, the 'will' to work deserted him: the period of despair lasted from 1867-1870.[47]

Rescue came in the form of Charles Renouvier, a leading neo-Kantian philosopher.[48] It is relevant that Renouvier was not an evolutionist: in an 1878 letter to James, he wrote that Spencer:

> owes his great renown in Europe to the fact that he has systematized the theory of evolution. But evolution is a craze. It will last fifteen or twenty years, and then we shall again speak of it as one spoke of the system of Lamarck at the time of Cuvier (quoted in Perry, 1935/1974, 1, p. 667).

The philosophical solution that Renouvier provided for James was

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47. For descriptions of the neurasthenic condition which prevented James from working see Perry, 1935/1974, 1, pp. 274-288, 320-323; see also Kuklick, 1977, pp. 160-161.

48. Although Renouvier belonged to the neo-Kantian school, it was his criticisms of Kant that established his reputation and which had such an effect on James (see Boas, 1967, p. 180). This is important because it meant that James, unlike the majority of the members of the Metaphysical Club, did not look for a solution in Kant's work, but based himself instead within the British empiricist tradition.

neither naturalistic nor empirically (in the experimental sense) derived: instead it arose from Renouvier's critique of Kant:

> Renouvier's importance for James lay in the Frenchman's attack on the Kantian distinction between understanding and reason. Kant questioned transcendent metaphysics by arguing that the understanding, applicable to the phenomenal world alone, is bound to become involved in contradictions when applied beyond this limit. For James the best example is the dispute between determinists and indeterminists. As phenomenal creatures we are determined. But we cannot apply the constitutive category of cause and effect beyond the limits of the understanding, and Kant argued for indeterminism by analyzing the regulative character of the "rational will" as it confronted noumenal ethical and religious demands. Here, however, we had faith, not knowledge. Renouvier said we could not partition the mind into the faculties of understanding and reason. Both intellectual and moral activity rested on faith. In effect, all guiding principles were regulative. If the rational will was justified in affirming freedom in the moral sphere, then intellectual speculations--Kant's understanding--may also affirm human freedom (Kuklick,1977, p. 162).

Perry summarizes Renouvier's philosophy as follows: for Renouvier as an empiricist, belief was assurance, knowledge dubious. Belief 'happened' through an act of will and nothing else, in the absence of logic or experience, could coerce it. For the empiricist absolute certainty exists only momentarily in the presence of particular facts. But cases arise when logic and experience are not decisive, when they have nothing to offer, and when a need for belief or resolution still arises. Renouvier stated that under these circumstances, belief is justified, indeed demanded, by the moral circumstances.[49] And thus James found in Renouvier the argument against determinism that he sought. In 1870 he wrote in his diary:

> I think that yesterday was a crisis in my life. I finished the first part of Renouvier's second Essais and see no

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49. See Perry, 1935/1974, 1, pp. 656-657. Renouvier's works have not been translated into English with the result that the author has had to rely on secondary sources for accounts of Renouvier's philosophy, and on James' correspondence with Renouvier.

> reason why his definition of free will--"the sustaining of a thought because I choose to when I might have other thoughts"--need be the definition of an illusion. At any rate, I will assume for the present--until next year--that it is no illusion. My first act of free will shall be to believe in free will (quoted in Perry, 1935/1974, 1, p. 323).

In fact, James was to assume that free will was no illusion until the end of his life. In any event, he was now armed with the conviction that consciousness had an active role to play: consciousness was not a purely mechanistic process whereby particular laws of physiological stimulation could account for which ideas would be enacted to the exclusion of others. The idea that consciousness was an epiphenomenon was now a psychological impossibility for James and in his rejection of automaton theory he was to declare that consciousness brings real ends into the world for the first time. Survival is no longer a mere hypothesis; it is guaranteed by the possession of consciousness (see James, 1879, pp. 16-17; see also James, 1890, 1, p. 141), and with this statement, James made his first real contribution to philosophy and psychology.

It is critical to understand what James was doing with the notion of free will he extracted from Renouvier's writings. He did not turn to idealist philosophy; instead, he immediately translated the idea of free will into a conception of a congenitally active consciousness--a consciousness that had evolved as a 'functional organ'.[50]

The following chapters will show how James married Renouvier's

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50. Perry, 1935/1974, 1, p. 117, quoted p. 96 below, states that James was hostile towards Kantian idealism. James' debt was to the Renouvier who criticized Kant's system. James did not regard idealism as some of his contemporaries (for example, Bradley and Royce) did as a valid means of extricating philosophy from the predicament that the success of evolutionary theory appeared to have left it in.

particular brand of empiricism to Darwinian biology and in the process will demonstrate that evolutionary theory and Renouvier's concept of free will were the critical influences on James' thought.[51] It was a brilliant move on James' part and one that is revealing in a number of ways. It shows how deeply James was committed to resolving the problems of the nature of consciousness within the terms of discussion set up by the nineteenth century evolutionists. And while James would eventually give voice to his own explicit version of the will to believe (in 1896), he first used the concept to establish that consciousness had to be efficacious in promoting the survival and physical well-being of the individual. He was as committed to evolutionary and scientific postulates at this point in his career as the most outspoken defendants of evolutionary theory (for example, Huxley and Tyndall). While James was to demolish so many of the structures of the traditional rationalist-empiricist philosophy and to build new edifices in their places, he was clearly a direct heir of that tradition:

> In the course of his intellectual adventures James encountered two idealisms, or two dispensations of idealism, the old and the new. The older idealism of Berkeley and Hume, revived by Mill and many of his contemporaries of the British school, won his allegiance, but did not hold it permanently. This idealism, being empirical, was consistent with James' fundamental philosophical creed. The new idealism, on the other hand, the idealism emanating from Kant and transformed by Fichte, Schopenhauer, and Hegel into a constructive metaphysics that threatened to conquer the dominion of the intellectual world, was to James profoundly alien. This was his favorite philosophical enemy, and an enemy worthy of his mettle (Perry, 1935/1974, 1, p. 711).

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51. It must be made clear that James makes few explicit references to either Renouvier or to Darwin in his work, and no explicit attempt will be made to catalogue those he does make. Instead, these two influences will be described in terms of the specific elements in James' work that relate to them.

James brought consciousness into the natural world as a real object, available for scientific-psychological study because he defined an active role for consciousness in determining individual survival. In doing so he not only created a new functional conception of consciousness based upon voluntaristic fiat, but made the biological theory of evolution the basis for his whole philosophical system.

James' debt to Renouvier was not confined to Renouvier's assertion of the reality of free will. Renouvier also provided James with the basis for a schema to study the relationship between subject and object or knower and known and to see that relationship as an essentially interactive one:

> To James, Renouvier was thus first of all an empiricist. His Renouvier was the philosopher who identified the real with the apparent, and knowledge with evident presence; who substituted "representations" for substances or other hidden entities; who constructed representations as embracing in their inherent duality of aspect both the subjective and the objective, and as standing in perceivable relations to one another, "multiple, composite, linked, interlaced". He was "the greatest living insister on the principle that unity in an account of things shall not overwhelm clearness". Even his "categories" were not deduced, but empirically observed and recognizing these evident connections of things, he escaped the skeptical atomism, the "nihilistic juxtapositionalism", of Hume and Mill: M. Renouvier's polemic against the metaphysical notions of substance, of infinite existence, and of abstract ideas seems to us more powerful than anything which has been written in English; but he differs from his English allies in giving as great an emphasis to the laws of grouping as the phenomena grouped (Perry, 1935/1974, 1, pp. 656-657).

James' particular brand of empiricism grew out of Renouvier's claim that the objective and subjective elements in any 'representation' or 'thought', 'feeling', or 'idea' are inextricably compounded in the moment of experience. Man and nature merge within the moment of 'experience'; later, abstractions from experience provide a growing fund of intellectual knowledge about the world which guides future

experiences. But the important moment for James would always be the moment of experience itself because he believed that this was where the ideas about the world were verified and where ideas were 'acted out' so that ideas had real physical effects.

While James was in the midst of preparing his psychology, the first fruits of the extension and transformation of evolutionary postulates were appearing. The emergence of new fields of scientific endeavour and new foci in 'older' fields represents the first concrete achievement that marked the broad direction of the changes that were taking place in the ways men thought about mind and its relation to the physical world. The common assumptions of science and mental philosophy were changing.

Galton's work provided the basis for the study of individual differences by such men as James McKeen Cattell (see Galton, 1908, pp. 245-246; and Cattell, 1890, pp. 373-381). The importance attached to individual differences was derived from Darwin's studies on the differentiation and individual variation within species. Social interaction was becoming important: the equation between the natural environment and human society was made and the notion that society provided the arena for the battle of survival excited a tremendous intellectual outpouring.[52] Hall's recapitulation model of child development was a landmark in itself: Hall claimed that development proceeded in stages which corresponded socially to the biological evolution of the race.[53]

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52. Note the growth of social Darwinism, literary realism and naturalism during this period (see Persons, 1950, for an account of the development of these movements).

53. See Lomax, 1978, pp. 1-44 for a review of the contrast between pre- and post-evolutionary theories of child development; see also Hall, 1904 and 1923.

The idea that the physical world and its occupants changed from one era to the next was gaining credibility. Men began to believe thatthey lived in a mutable universe and that the human species itself might also be mutable. Ideas of the relative nature of all aspects of the universe, including human achievements and values were replacing the earlier concepts of progress. Progress had earlier been defined as the slow unravelling of the secrets of the static, eternal universe; progress consisted in making known that which was there to know, eternally through all time (see Marcell, 1974, pp. 52-56). Evolutionary theorists demonstrated that nature changed in significant ways so that whatever the 'new' universal laws were to be--and there would assuredly be new universal laws--they would at least have to take account of the observable changes in the natural world. A concern for pragmatic, functional solutions to the problems of life on earth began to replace the eighteenth century concern with accumulating abstract knowledge of the workings of the universe as they existed behind the shifting, and therefore unreliable, appearances of reality.

But the progress wherein this shift was made was complex: Darwin had been concerned with preserving the uniformity of nature, and his mechanism of natural selection was intended to enlarge the scope of the mechanistic model of the physical world, so that the shift in world view cannot be directly attributed to Darwin. Josiah Royce states that the evolutionary era can be divided into an initial 'polemical' phase and a philosophical stage when evolutionary postulates were extended and applied to a wide range of problems. Because Royce's distinction between the two evolutionary phases will be used as the basis for analyzing James' role in the history of

psychology and philosophy, it is appropriate to quote Royce at some length:

> In defining the historical position which William James, as a thinker, occupies, we have of course to take account, not only of national tendencies, but also of the general interests of the world's thought in his time. William James began his work as a philosopher, during the seventies of the last century, in years which were, for our present purposes, characterized by two notable movements of world-wide significance. These two movements were at once scientific in the more special sense of that term, and philosophical in the broad meaning of that word. The first of the movements was concerned with the elaboration--the widening and the deepening--of the newer doctrines about evolution. This movement had indeed been preceded by another. The recent forms of evolutionary doctrine, those associated with the names of Darwin and Spencer, had begun rapidly to come into prominence about 1860. And the decade from 1860 to 1870, taken together with the opening years of the next decade, that constituted what you may call the storm-and-stress period of Darwinism, and of its allied tendencies, such as those which Spencer represented. In those years the younger defenders of the new doctrines, so far as they appealed to the general public, fought their battles, declared their faith, out of weakness made strong and put to flight the armies of the theologians. You might name, as a closing event of that storm-and-stress period, Tyndall's famous Belfast address of 1874, and the warfare that waged about that address. Haeckel's early works, some of Huxley's most noted polemic essays, Lange's "History of Materialism", the first eight or nine editions of von Hartmann's "Philosophy of the Unconscious", are documents characteristic of the more general philosophical interests of that time. In our country, Fiske's "Cosmic Philosophy" reflected some of the notable features that belonged to these years of the early conquests of evolutionary opinion.
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> Now in that storm-and-stress period, James had not yet been before the public. But his published philosophical work began with the outset of the second and more important period of evolutionary thought--the period of the widening and deepening of the new ideas. The leaders of thought who are characteristic of this second period no longer spent their best efforts in polemic in favor of the main ideas of the newer forms of the doctrine of evolution. In certain of its main outlines--outlines now extremely familiar to the public--they simply accept the notion of the natural origin of organic forms and of the general continuity of the processes of development. But they are concerned, more and more, as time goes on, with the deeper meaning of evolution, with the study of its factors, with the application of the new ideas to more and more fields of inquiry, and, in case they are philosophers with the reinterpretation of philosophical traditions in the light of what had resulted from that time of storm-and-stress.
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> James belongs to this great second stage of the evolutionary movement, to the movement of the elaboration, of the

> widening and deepening of evolutionary thought, as opposed to that early period of the storm-and-stress. We still live in this second stage of the evolutionary movement. James is one of its most inventive philosophical representatives. He hardly ever took part in the polemic in favor of the general evolutionary ideas. Accepting them, he undertook to interpret and apply them (Royce, 1911/1969, pp. 10-14).

In the earlier sections of this chapter we showed how the common assumptions of the Newtonian, or pre-evolutionary era underwent gradual changes in meaning. The appearance of evolutionary theory both ratified and extended these changes, and the era was climaxed by the appearance of the automaton theory of mind. The first stage of evolutionism thus describes the appearance and acceptance of Darwin's theory, and with it, the introduction of automaton theory. Automaton theory is regarded as the climax of the Newtonian tradition because it was the last 'position' reached in mental philosophy to be based on the common assumptions of the Newtonian period. That is to say, Huxley and Tyndall both regarded evolutionary theory as the final element in a comprehensive, uniform, 'Newtonian' world-view. It is therefore the major hypothesis of this thesis that the second stage of evolutionism described by Royce ultimately involved the generation of a <u>new</u> set of common assumptions--that is, philosophers such as James, Peirce, Wright, and Royce set themselves the task of re-defining the world-view. We have already seen that James was disenchanted with the automaton theory of mind; the following chapters will show that his attempt to develop an efficacious model of consciousness did not involve an attempt to find a place for free will within the mechanistic, elementaristic, neurophysiological model as Carpenter had done, but to recast the assumptions about the nature of mind and the physical world that had sustained the mechanistic view of mind for so long.

Thus, a new set of common assumptions was generated during the second stage of the evolutionary era, and James played a major part in the determination of this new set of assumptions. The term 'philosophication of evolutionary theory' will be employed to describe the process wherein the new set of assumptions was generated.

The common assumptions which are included in our modern world view came to be common assumptions because the late nineteenth century thinkers, like James, extended, emphasized, transformed, and systematized the ideas that they selected out of evolutionary theory. These common assumptions, then, can be seen as implicit in Darwin's theory only from our historical perspective. They were not 'obvious' or 'common sense' ideas to James and his circle. This is partly why Renouvier exerted such an influence over James. He provided James with a particular perspective for his analysis of the new science. He also provided certain concepts which James could apply to the new science so that in the end, James' system bears little resemblance to Renouvier's or to nineteenth century evolutionism as it first appeared in psychology.

The statement that the shift in the common assumptions which form the base of our twentieth century world view took place during the second period of the evolutionary era is both problematic and controversial, when its verification centres around figures such as James, Hall, Baldwin and the members of the Metaphysical Club--notably Peirce. Our present views of mind and consciousness are inherited in part from the controversies that raged over evolutionary theory, and the subsequent attempts to resolve the dilemmas through the formulation of broad scientific and philosophical systems that went

far beyond the dimensions of the debate itself. However, many critics would argue that the revolution that took place in physics towards the end of the nineteenth century was at least of equal importance in determining the way we conceive of the world (see Kuhn, 1970; and Mackenzie, 1977, pp. 24-27, for a discussion of the attempt made in psychology to model itself on physics). To be sure, remnants of the functional, purposive view of consciousness that emerged in the late nineteenth century remain in certain broad areas of psychology today--perhaps most notably in the fields of child development, individual differences, and educational psychology. But functionalism as conceived by James, Hall, Dewey, and the Chicago functionalists has not carried the day, and the dominant psychological theories encompassed by Behaviourism owe more, at least in spirit, to the passive organism models, automaton theory, and the physiological determinism of the associationists and early evolutionists so that a tension exists today between the historical alternatives as we have inherited them.

James' major role in the history of psychology does not therefore reside in the creation of a continuing psychological tradition or 'research paradigm'. His greatness, and his continuing importance for contemporary psychology is to be found in the part he played in changing the underlying assumptions that we bring to bear in considering psychological problems. The following analysis of James' work will concentrate on the changes he made in psychology and philosophy as the means of understanding his contribution to the 'philosophication' of evolutionary theory and his attempts to further the instigation of a new world view. That he <u>was</u> attempting to instigate a new way of regarding consciousness and its relationship to the physical world will be shown in the analysis of the strong

polemical statements in his philosophy, his reaction against automaton theory, his rejection of elementarism, and his efforts towards the reconstruction of consciousness. At the same time, it is necessary to look at James' relationship to the rationalist-empiricist tradition in the light of those assumptions and problems he succeeded in changing and providing answers for, and those areas where his solutions proved either unsatisfactory or unpalatable to the thinkers who followed him. James' failure to generate a psychological theory which would provide a 'paradigm' for the new science is in part due to historical circumstances (for example, the success of the new physics), and in part due to the internal difficulties of his theory, and this analysis will concentrate on the latter problem.

If James' task was to be the 'philosophication' of the principles of the new science, his obvious starting place was epistemology. After all, Locke and Descartes had reacted to the new science of their day with epistemological questions and they created a philosophical framework that was both compatible with and an extension of the Galilean-Newtonian physical theory. By the time James began his systematic work on the problems of knowledge, psychology was beginning to replace philosophy as the area in which questions concerning human knowledge could most profitably be studied, and so James began with psychology.

But James' commitment to psychology was never absolute. While James stands as one of the founding fathers of modern psychology he was increasingly drawn towards philosophy. His dislike of laboratory work is well documented[54] and he eventually turned his

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54. See James, 1890, 1, p. 192; see also Perry, 1934/1974, 2, pp. 6-14, 115. Perry describes the difficulties involved in (contd.)

laboratory over to Munsterberg (see Perry, 1935/1974, 2, pp. 15, 138-144) in order to devote himself full-time to philosophy. This is significant. James began his career with an ardent admiration for the progress made by nineteenth century neurophysiologists and for a time was convinced that man must in fact be a conscious automaton. His adventure with automaton theory was soon over; his interest in neurophysiology persisted until the end of his career. The abandoning of psychology for philosophy was not a particularly radical step at the time. The empirical approach to the study of mind was still fairly new. James had a share in defining the parameters of psychology as a science but the narrow positivism (see James, 1890, 1, pp. vi, 1-11) he insisted on for psychology was too restrictive for his purposes even at the time when he so optimistically defined the limits of psychological investigation for the Principles. Paradoxically enough, he limited the subject-matter of psychology to such an extent that many of the questions he asked had no place in psychology (see for example, James, 1890, 2, pp. 569-579 on the place of free will), and he turned to the more 'open' world of philosophy. But even though James later turned his attention completely to philosophy, his philosophy is always grounded in his psychology; radical empiricism, for example, is based on his earlier structure of consciousness and the radical account of the structures and functions of the mind is extended into a description of the physical world. His first ventures into psychology eventually resulted in a comprehensive model of mind and the world so that he produced a psychology, an epistemology (pragmatism),

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54. (contd.) deciding exactly when James set up his first laboratory at Harvard. James first used the physiological lab. in 1872 for 'psychological studies'; the first formal lab. was set up in 1875-6.

a methodology (pragmatism), and a metaphysic (radical empiricism and pluralism). These accomplishments in turn lead to the hypothesis that James' system contained all of the necessary elements for a new world view. Whether or not this hypothesis is justified, from the perspective of an internal examination of James' work, will be discussed below.

James' endeavour to construct a new world view was complicated by the fact that he began with psychology, and was to insist throughout his career that consciousness could be taken as the 'centre' of the universe. The edifice of Newtonian science did not begin to crumble until the end of the century; as an all-inclusive world-view, its foundations were shaken by the onslaught of evolutionary theory. But the rumblings were soon stilled. Physics and chemistry retained their respected positions in the scientific hierarchy. Biology took up a place beside them, and the elevation of biology in this way actually strengthened the faith placed in the sciences and their methods (see Mackenzie, 1976, pp. 331, 335; and Marcell, 1974, pp. 94-145). Thus, when James 'perceived' incompatibilities between the old associationism and the new biology, he was not only attacking an old psychology from a new perspective, he was attacking the whole conception of reality upon which that concept of consciousness rested. His abandonment of psychology, and his turning to philosophy was not, therefore, solely a matter of positivistic restrictions limiting his scope. The problems he needed to confront, in order to broaden and consolidate his psychology seemed to go beyond the boundaries of any scientific psychology.

A new epistemology was essential, for James and others argued that the traditional conception of mind was incompatible with their interpretation of the new scientific 'truths' and prophesied

that a new theory of reality must and would emerge. Caught without a new theory of physics and hence without one of the principle sources for a new epistemology and a new metaphysic, their recourse was to restructure the mind that perceived reality and then to look for insights into what that reality must be. James' theories of reality will therefore be examined in terms of their genesis in his theories of consciousness. As James' philosophy matured, his conception of what the physical world is really like underwent a radical change. It will be shown that the external world of the Principles is constructed along Newtonian lines while the world of the final philosophy, Some problems of philosophy, is explicitly a temporal, mutable world. The new set of common assumptions therefore emerged slowly as James progressed from his first theory of consciousness through to his final philosophy.

The journey was difficult and there were substantial problems all along the way: it will be shown that the problems engendered by James' adoption of a mind-body dualism in the Principles are never resolved in either his pragmatism or his radical empiricism and that an analysis of this less explicit dichotomy in the Principles is necessary to assess the strengths and weaknesses of the philosophy. This dichotomy will be referred to throughout as the structure-function dichotomy. Essentially, it will be argued that behind James' deliberate use of dualism in the Principles there exists a form of dichotomy which seems to go unrecognized by James himself, and that the existence of this unrecognised dichotomy is responsible for some of the difficulties that are encountered in the analysis of his pragmatic theory of truth. James' psychology will be shown to incorporate two distinct functional perspectives of consciousness with the result that the 'reality-

oriented' or 'adaptive' functions clash with the 'metaphysical' or 'ethical' capacities. These two sets of tendencies co-exist in each indvididual so that a continuous (and it must be allowed, possibly productive) tension is an inevitable characteristic of James' conception of consciousness.

The problem with this situation is that the two sets of characteristics (which also appear to have different psychogenetic origins) are never clearly defined in relation to one another so that James' concept of the functional consciousness is problematic in much the same way that other nineteenth century conceptions such as Carpenter's are. That is, the moral aspects of consciousness begin to appear as anomalies which cannot be easily reconciled with the rest of the naturally evolved and functionally adaptive characteristics in either James' or Carpenter's systems. The problem is enhanced because James is attempting to construct a unitary, hierarchical structure for consciousness, and the brilliant development of the stream of consciousness serves to mask the functional dualism and to create the impression that James had succeeded in creating an evolutionary, unified, conception of the mind. Therefore, the stream of thought and the structures of reality and action will be analyzed with the intention of revealing this dichotomy and its impact on the pragmatism.

James' inconsistency and tendency towards paradox has often been remarked on (see Allport, 1943, pp. 95-120). However, rather than accepting Allport's conclusion that James' writings contain a multiplicity of discrete paradoxes, the present analysis will attempt to show that the apparent inconsistencies and paradoxies can be related to the underlying structure-function dichotomy; they thereby disappear as mere inconsistencies or paradoxes and

reappear as discrete manifestations of a deep and consistent problem in James' writings. Using this mode of analysis will make it possible to systematize the difficulties in James' works and therefore leave us in a better position to judge the merits and failings of his system as an alternative to the pre-evolutionary world-view.

James' early rejection of automaton theory could have led him into a position rather like Carpenter's given Renouvier's influence. Carpenter attempted to find a place for the efficacy of consciousness within the deterministic neurophysiological model itself (see above, pp. 42-49). James reacted instead by supposing that consciousness must in fact be efficacious from the beginning. The hypothesis that conscious organisms are interested in surviving and therefore do survive, marks the beginnings of James' attempt to delineate a new conception of the world. The initial reaction against the automatist position led him to question other assumptions of the Newtonian world, and this eventually culminated in the construction of pragmatism, an epistemology based on evolutionary principles. Pragmatism was new; it reacted against the nineteenth century philosophical 'establishment'. The view to be presented here, that pragmatism is a specifically evolutionary epistemology, will be put forward at some length below. Similarly, it will be argued that radical empiricism and pluralism are evolutionary metaphysics.

Finally, the influence of Darwin on James' constructions will be analyzed throughout the text, and reference will be made to Darwin's writings to show the substantial transformations of meaning that Darwin's theory underwent in the hands of James and his contemporaries. These 'transformations' have their genesis in the

Principles and come into flower in the philosophical writings. This thesis overall is the account of these transformations in the hands of William James.

CHAPTER 2

WILLIAM JAMES AND THE PROBLEM OF INTERESTS

Although James recovered from his spiritual crisis in 1870, as a result of reading Renouvier's Essais (see H. James (Ed.), 1920/1969, 1, p. 147), he did not begin active work for two more years. James spent the time studying and reading as much as his health permitted, and in 1872, obtained his first teaching post at Harvard.[1] He wrote a fair number of book reviews during the period between 1872 and 1877, but most of these were unsigned (see McDermott, 1967, pp. 813-817 for a list of these reviews), and it was not until 1878 that his first major papers appeared in the journals. The 1878 papers mark the real beginning of James' psychological and philosophical system. The publication of "Spencer's definition of mind as correspondence", "Brute and human intellect", and "Quelques considerations sur la methode subjective", were closely followed in 1879 by "Are we automata?", "The spatial quale", "The sentiment of rationality", and in 1880, "The feeling of effort". Thus, by 1878, James' career was in full swing, for in that year James also signed the contract with Holt for the Principles.

James had had several years of study and teaching between the time he was first inspired by Renouvier and the publication of his first major papers. The physiological aspects of his teaching and reading were undoubtedly important influences during this period when he was 'consolidating' his views. While Renouvier provided James with philosophical grounds for rejecting automaton theory, the psychology of his day was heavily indebted to neurophysiology, and James realized that he could not simply graft Renouvier's doctrine of

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1. (See H. James (Ed.), 1920/1969, 1, pp. 165, 179). James was originally employed as an instructor in physiology but by 1876 he was teaching physiological psychology and had started his psychological laboratory.

free will onto Darwinian postulates to ensure the efficacious nature of consciousness. To satisfy the physiological 'demands' of psychology, James had to demonstrate that consciousness was fundamentally efficacious. That is, he had to find some means of expressing the insight that an efficacious consciousness was a necessary prerequisite for survival, and he had to do this within the naturalistic, physiological, evolutionary framework of late nineteenth century psychology.

James was seeking an alternative to automaton theory, and it is therefore necessary to view James' earliest attempts to restructure consciousness in the context of his reaction against automaton theory.[2] His task was two-fold: he had to construct a theory to 'prove' that the notion that consciousness was efficacious was not only plausible, but demanded by evolutionary principles, and he had

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2. Dooley makes this point in reference to James' article, "Remarks on Spencer's definition of mind as correspondence". He says that James claimed that his was an 'interactionist view of man" (Dooley, 1974, p. 8), and that an interactionist view was required if consciousness was to be really shown to be efficacious. But, Dooley goes on to say, James:

> defines an interactionist view of man only in reference to a parallelist view of man. That particular parallelist view of man he specifically refers to is the conscious automaton theory which holds that consciousness is an impotent epiphenomenon, which merely accompanies purely neutral processes. James argues that if our concept of man is not to be distorted, we must opt for an interactionist view of man in which consciousness is causally efficacious in directing behaviour. Although it is clear that in an interactionist view of man consciousness is efficacious, it is not clear what interacts nor precisely how consciousness is efficacious. In other words, the whole notion "an interactionist view of man in which consciousness is efficacious" is only defined in reference to the whole notion "a conscious automaton theory view of man in which consciousness is an impotent epiphenomenon"; the individual terms in neither of the notions are defined (Dooley, 1974, pp. 8-9).

This unfortunately, is as far as Dooley goes in criticizing James' early interest theory. Later, Dooley ratifies the theory insofar as he includes the notion of interest as a viable part of James' larger theory of cognition (see Dooley, 1974, p. 48).

to refute automatism. He began with an attempt to work out the structure of a functional psychology based on the interaction between mind and nature, and Knox shows how closely the new psychology was modelled on Darwinian principles:

> Since the environment to which an organism consciously reacts is the environment as it exists for that organism's consciousness, and since the environment as so viewed is the product of selective elimination on the part of the consciousness concerned, it follows that conscious selection creates the known world in precisely the same sense in which 'natural selection' creates the species. "Each of us literally chooses, by his way of attending to things, what sort of universe he shall appear to himself to inhabit" (Knox, 1914, p. 23; internal quotation, James, 1890, 1, p. 424).

Darwinian evolution is based on selectivity in the environment: the well-adapted or best fitted to their surroundings survive and the lesser so perish, and James expanded this idea into the psychological conception of a selective, active mind. This extension of Darwinian principles gave James an alternative to automaton theory while allowing him to retain a naturalistic, neurophysiological structure for conscious activity. Interests, as the means of conscious selection, are first mentioned in James' 1878 article "Remarks on Spencer's definition of mind as correspondence".

James opened his argument by insisting that to be meaningful, Spencer's formula that life, including mental evolution, consists of the 'adjustment of inner to outer relations' had to be rewritten to distinguish between 'mental action' per se and 'right mental action'. This redefinition:

> is frankly teleological. It explicitly postulates a distinction between mental action pure and simple, and right mental action; and furthermore, it proposes, as criteria of this latter, certain ideal ends--those of physical prosperity or survival, which are pure subjective interests on the animal's part, brought with it upon the scene and corresponding to no relation already there. No mental action is right or intelligent which fails to fit this standard (James, 1878/1920, p. 50).

He then adds that "These interests are the real a priori element in cognition" (James, 1878/1920, p. 50). A fairly logical criticism of Spencer's position follows, as James shows that an interested consciousness is necessary for the particular survival and adjustment of any individual, and he arrives at the conclusion that:

> I, for my part, cannot escape the consideration forced upon me at every turn, that the knower is not simply a mirror floating with no foot-hold anywhere, and passively reflecting an order that he comes upon and finds simply existing. The knower is an actor, and co-efficient of the truth on one side, whilst on the other he registers the truth which he helps create. Mental interests, hypotheses, postulates, so far as they are bases for human action--action which to a great extent transforms the world--help to make the truth which they declare. In other words, there belongs to mind, from its birth upward, a spontaneity, a vote. It is in the game, and not a mere looker-on; and its judgments of the should-be, its ideals, cannot be peeled off from the body of the cogitandum as if they were excrescences, or meant, at most, survival (James, 1878/1920, p. 67).

This passage typifies James' early writings on the active, participating consciousness, itself determined by its interests and hence determining the known world. The passage is lyrical, inspirational, and perhaps even convincing. But James is convincing only on aesthetic grounds. No substantial analysis or definition is given and a fuller, more dynamic causal account is essential: how are interests determined, and once determined, how do they dominate the stream of thought? James appears to feel that he has provided an adequate account of the interests, for in his 1879 paper "Are we automata?" he again uses the idea of interests as a means of justifying his contention that consciousness is efficacious, and refers the reader to his 1878 paper as follows: "I have treated this matter of teleology being an exclusively conscious function more at length in an article on "Spencer's Definition of Mind" ...to which I take the liberty of referring the reader" (James, 1879, p. 7; see also James, 1878/1920, pp. 49-50).

That he is satisfied with the account of interest given in 1878 seems clear when we examine the usage of the concept in the remainder of his "Are we automata?" where interests are used to account for the selection of activities:

> We have found that the unaided action of the cerebral hemispheres would probably be random and capricious; that the nerve-process likely to lead to the animal's interests would not necessarily predominate at a given moment. On the other hand, we have found that an impartial consciousness is a non-entity, and that of the many items that ever occupy our mental stage Feeling always selects one as most congruous with the interests it has taken its stand upon. Collating these two results, an inference is unavoidable. The "items" on the mental stage are the subjective aspects of as many nerve-processes, and in emphasising the representations congruous with conscious interest and discouraging all others, may not Attention actually reinforce and inhibit the nerve-processes to which the representations severally correspond? (James, 1879, p. 14).

That some kind of mechanism is required to account for purposive behaviour is clear enough: the automatists and 'determinists' themselves had developed detailed systems to explain the behavioural repertoires of men and animals. The question is whether or not James' concept of interest is sufficiently developed to support his conclusion that consciousness is efficacious. In James' "Are we automata?" interests account for the selections we make, and James tries to explain divergent pieces of behaviour solely in terms of the presence of divergent interests. That is, if A performs action C, and B does not, the difference is ascribed to a difference in interests.[3]

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3. See James, 1879, pp. 15-19. This is an important paper; it contains, in shorter and more hypothetical form, the rationale of James' refutation of automaton theory, and the genesis of his later theories of reasoning and volition. The expanded versions of these ideas were later to appear in the Principles. The remainder of this chapter will discuss James' refutation of automatism on the basis that consciousness is efficacious because it is interested, using the Principles as the major reference to show how James extended his earlier theory. The Principles contains James' most developed refutation of the automaton theory; it also contains his last explicit work on the interests.

The idea that selection is dependent upon the possession of discrete interests is carried over into the Principles:

> These aesthetic and practical interests, then, are the weightiest factors in making particular ingredients stand out in high relief. What they lay their accent on, that we notice: but what they are in themselves, we cannot say. We must content ourselves here with simply accepting them as irreducible ultimate factors in determining the way our knowledge grows (James, 1890, 2, p. 345).

This statement is both radical and unsatisfactory: James is charging that all selections are made in accordance with factors which cannot be defined or explained. Interests, because of their 'mysterious' nature are exempted from the type of empirical study which is to be applied to all other aspects of the conscious process. Nevertheless, James of course does not end his discussion of interests with the statement quoted above, and goes on to discuss the role played by the interests in co-ordinating conscious activity.

James indicates in the Principles that interests first arise with the primitive feelings--those basic 'raw sensations' which later develop into conceptually 'meaningful' ideas and extend to incorporate our practical, aesthetic, intellectual, emotional, volitional, and ethical lives:

> Man, by his immensely varied instincts, practical wants, and aesthetic feelings, to which every sense contributes, would be sure to dissociate vastly more characters than any other animal; ...The diverse interests lead, too, to a diversification of experiences, whose accumulation becomes a condition for the play of that law of dissociation by varying concomitants (James, 1890, 2, p. 345).

Interests as they first appear occupy the same dynamic place in consciousness as instinctive impulses. Interests must originally be spontaneously aroused with instincts, at least insofar as the individual experiences certain feelings (for example, hunger), which prompt certain instinctive responses (for example, sucking and biting on presentation of food). The feeling of hunger must contain an implicit

interest in having the feeling satisfied; and this interest, coerced by the physical needs, becomes attached to the particular objects in the external world which satisfy the need. An interest therefore eventually encompasses internal sensations or feelings, and the particular objects in the external world which correspond to internal sensations. As conceptualization develops, our interests develop and lead us into a greater range of experience. We 'get' more, or 'know' more about the world because our varied interests lead us to dissociate more and more particulars out of objects than the first instinctive associations yield. Our interests thereby determine what we will experience; they determine which objects will be separated as worthy of our attention:

> My experience is what I agree to attend to. Only those items which I notice shape my mind--without selective interest, experience is an utter chaos. Interest alone gives accent and emphasis, light and shade, background and foreground--intelligible perspective, in a word (James, 1890, 1, p. 402).

The role of interests as determinants of what we shall agree to attend to in potential experience is a consistent strand in the Principles. Our interests determine which object shall be chosen at any level as the most 'significant', 'satisfying', or 'true'. An object, theory, relation, or event must be satisfactory in two ways: it must satisfy the demands of the situation--for example, food in the case of hunger, explanation in the case of scientific investigation--and it must appeal to the related needs extant in the stream of consciousness at any given time. Thus, an object is interesting, and therefore 'selected' not only because it has the particular properties sufficient to satisfy the particular need, but because it possesses, in addition, properties that appeal to co-existing needs, or interests:

> It is conceivable that several rival theories should equally well include the actual order of our sensations in their scheme, much as the one-fluid and two-fluid theories of electricity formulated all the common electrical phenomena equally well. The sciences are full of these alternatives. Which theory is then to be believed? That theory will be most generally believed which, besides offering us objects able to account for our sensible experience, also offers those which are most interesting, those which appeal most urgently to our aesthetic, emotional, and active needs. So here, in the higher intellectual life, the same selection among general conceptions goes on which went on among the sensations themselves.[4]

Unfortunately, this is about as far as James goes in defining interests and their role in conscious selection, so that interests appear to be simple additions to the other feelings, ideas, or thoughts that make up the stream of consciousness. Because James contends that the interests must simply be accepted as irreducible factors which determine the growth of knowledge and therefore defines the interests solely in terms of their relations to other feelings, it is difficult to decide whether their 'existence' provides the basis for an adequate refutation of automaton theory.

If Knox's parallel between selective nature and selective mind is truly applicable as a description of James' epistemology then it must be added that the mind, in making its initial separations of reality, is at least at the onset, no more consciously selective than nature. And if the initial selections are made more or less randomly, or are determined by instinctive demands and responses, we are then compelled to assess the influences of these selections upon subsequent ones. James' account of the structures of action is

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4. (James, 1890, 2, p. 321). James in fact makes use of the 'interests' to provide the structural continuity between the 'sensational' and 'higher' mental lives. The dynamics of selection must remain constant, regardless of the nature of the selected object.

strongly deterministic, in deliberate contrast to his assertion that free will may obtain in special circumstances. The worlds of freedom and the worlds of mundane reality clash in the demands they make upon the individual. This conflict emphasizes the importance of the status of the interests when we ask to what degree we actually create our own reality, and to what degree that reality is imposed on us both from within and from without.

At this stage the case for James' voluntarism rests solely on the accidental results of possessing an interactive mind. Interests, as they initially accompany instincts, can have no more foresight of ends than the instincts themselves. If the instinct is blind, and the individual incapable of cognizing ends until experience substitutes other patterns of conscious interaction, then interests must be correspondingly blind at the onset. James' conception of an efficacious consciousness is based on the possession of interests and on the resulting development of unique perceptual and conceptual schemas of reality; it relies on the fortuitous possession of discrete interests, rather than upon a consciously directed structuring of experience.

The problems that arise from James' failure to give an adequate teleological account of the interests become more explicit when we look at his dualistic model of psychogenesis. This theory proposes that the mind is assailed in two ways: the first means is through the 'front-door' of sensory experiences and includes those experiences gained through active interaction with the environment. 'Back-door' influences are comprised of the indirect causes of mental modification: molecular accidents, and other random variations in the unstable brain-tissue. These influences are responsible for our moral, aesthetic, and intellectual experiences, while 'front-door'

propensities facilitate our comfortable adjustment in the external world (see James, 1890, 2, p. 627). At the same time, the 'back-door' propensities are irrelevant to biological adjustment, and may actually be opposed to comfortable adjustment. The final consciousness is a product of these separate, independent, and sometimes antithetical types of tendencies; the individual's interests therefore must originate in both of the two evolutionarily derived patterns of development.

That James intended the interests to be taken as the "irreducible teleological factors of consciousness"[5] is confirmed by R.B. Perry. He reminds us that James rewrote Spencer's formula to read: "Right or intelligent mental action consists in the establishment, corresponding to outward relations, of such inward relations and reactions as will favour the survival of the thinker, or at least, his physical well-being".[6] Later, Perry argues that "morality is selective from among interests" (Perry, 1916, p. 351), but he does not provide any insight into how the problem of conflicting interests is to be resolved: in this case, the presence of <u>particular</u> moral or instinctive interests can only be inferred after the fact of any particular action.

While Perry cannot really be criticized for not dealing with the problem, it is perhaps significant that he does not see the interest theory as problematic. In fact he sees it as one of James' most positive achievements (see Perry, 1916, pp. 350-351). He appears

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5. (Perry, 1916, p. 350). Moreover, Perry later stated: "the teleological interpretation of mind does not contradict either its cognitive or its biological role--it explains them both" (Perry, 1935/1974, 2, p. 76).

6. Perry, 1916, p. 350; see also James, 1878/1920, p. 49, for James' original statement.

to be satisfied that James has dealt satisfactorily with the problem by recognizing that there is a problem in deciding which interest will prove predominant. For James himself wrote:

> The standard of survival or self-preservation is most potent. But there exists a host of other standards, aesthetic and moral, imperative so long as they do not conflict with this one and sometimes imperative over this one. In the preliminary selection by the senses of certain objective orders of movement, it is difficult to see what standard is subserved (James, 1879, pp. 18-19).

James concludes that the enactment of any particular interest depends upon the individual's ability to apply the 'right' or 'desired' interests in appropriate situations; this ability depends upon selecting the correct concept of the situation and acting accordingly (See James, 1879, p. 20; see also James, 1890, 2, pp. 531, 561-567). But this does little to resolve the problem of how the two types of interests are related to one another, or how interests influence sophisticated problem solving at all. Once again, the concept of interest proves elusive. Instead, we soon find ourselves looking towards James' extensive analysis of the development of perception and conception to discover the 'mental' basis for selection. And this means that the analysis of perception and conception is confounded: if we accept James' notion that interests are the teleological basis of consciousness, then the particular development of perceptual and conceptual capacities must be assumed to be at least partially dependent upon the play between interests.

James makes a distinction between those interests which facilitate adjustment and those which appear to be "without any utility at all" (James, 1890, 1, p. 325). Those interests without utility, however, include such tendencies as a liking for alcohol or music, and such interests would obviously have a strong influence on the

development of the individual's perceptual and conceptual structures. Interests, in this case, serve as the impulsive and distinguishing characteristics of personality. The only restrictions James places upon the efficacy of interests at this point are those imposed by 'natural selection' which eliminates those tendencies which would imperil the individual's survival or that of his species (see James, 1890, 1, p. 325). The problem with this is that there is no further analysis of the mechanism of natural selection itself, or on how it works to 'weed out' harmful tendencies. The recognition that too much alcohol is harmful to the individual who has a strong 'interest' in it, comes about through the individual's conceptualization of his situation (See James, 1879, p. 20; see also James, 1890, 2, p. 565). Individually, if not for the race, it is difficult to see how natural selection is an operative mechanism here. All that James finally claims regarding natural selection is that, numerically, the instinctive interests outweight the 'fortuitous' interests (see James, 1890, 1, p. 325). Thus, the relation of interests to perceptual and conceptual development is not satisfactorily resolved.

Furthermore, we cannot conclude that interests are simply synonomous with feelings or ideas, because James states in the Principles that interests 'distinguish' particular thoughts within the stream of consciousness. It is the interest attached to the thought, idea, or conclusion, that makes it significant:

> In either case it [the conclusion] stands out from the other segments of the stream by reason of the peculiar interest attaching to it. The interest arrests it, makes a sort of crisis of it when it comes, induces attention upon it and makes us treat it in a substantive way (James, 1890, 1, p. 260; see also James, 1890, 2, pp. 558-559).

James limits any further discussion of differentiation of interests to their function. As parts of the structure of

consciousness (insofar as anything meaningful can be said about the structure of interests), the interests do not appear to be differentiated. That is, they operate consistently in relation to the rest of the conscious process. James indeed confirms this: he uses the terms interest and instinct interchangeably in describing the distinction between the 'egoistic self' and the rest of the world and writes that sympathetic and egoistic instincts appear to arise "on the same psychologic level" (James, 1890, 1, p. 325). The 'back-door', 'front-door' distinction is a functional distinction: interests can be functionally distinguished because they facilitate conflicting forms of behaviour. While James makes the 'front-door' and 'back-door' distinction on the basis of how the interests form a part of consciousness in the first place, there is nothing in his work to indicate that they can be physiologically distinguished once they are there. Nor, in psychological terms, is there anything in his writing to suggest that 'front-door' and 'back-door' interests act differentially on the stream of consciousness itself.

If the interests provide the selective 'force' of consciousness then some definition of their impulsive power is necessary. James' theory of instinct is plastic and dynamic in the sense that conflicting instincts may be aroused by the same stimulus. The instincts are painstakingly enumerated and described, and the dynamics of internal and external factors which determine their differential arousal are largely accounted for (see James, 1890, 2, pp. 383-441). If interests are to achieve a similar status, they must be differentiated from instincts <u>per se</u>. Similarly, they must be distinguished from the impulsive characteristics of the cognitive ideas and feelings as well if they are to come into their own as real selective

mechanisms. Otherwise, they can only be considered as abstractions from past activities. The other alternative is to take the term 'interest' in a purely adjectival sense and use it to distinguish the impulsive, and non-impulsive, mental states from an introspective point of view. At times James appears to lapse into this type of usage: "If one must have a single name for the condition upon which the impulsive and inhibitive quality of objects depends, one had better call it their interest" (James, 1890, 2, p. 558). But what, then, happens to the idea of interests as the teleological basis of consciousness?

James uses the concept of interest to account for sophisticated selections, but there is no adequate connection of the 'back-door' propensities with the specific selections made. In the example above (see James, 1890, 2, p. 321), of the choice between two theories which provide equally comprehensive and rational explanations for a given phenomena, James fails to give an explanation of how the interests develop along with the cognitive capacities so that they can give the necessary 'push' to conscious selection. There is a substantial gap between the initial propensity and the sophisticated interest that provokes the final selection.

To sum up, interests are described as the basic teleological units of consciousness in some parts of James' work; in others, they are confounded with instincts or other feelings or ideas. They are similarly used to describe adaptation (through instinct) and the 'accidental' activities or predispositions of individuals, so that 'interest' is said to account for sophisticated 'conceptual' selections. The term is also used in a descriptive, or introspective sense, where 'interest' simply means 'selection'. Finally, interests are 'attached' to ideas in the stream of thought.

The case for an efficacious consciousness is substantially weakened if we try to use interests, as James and Perry suggest, as the teleological basis for consciousness, because it is too easy to see the interests as epiphenomena--that is, as products of, or extrapolations from, past behaviour, or as mere descriptions of conscious states. The dualistic nature of the interests relates to the problem of the possible epiphenomenal status of the interests because it intensifies the dilemma of how any particular interest acts to propel any particular conscious selection.

It can be seen, therefore, that interests as James defined them do not provide an adequate refutation to automaton theory. It is consistent with James' description, although not with his intent, for interests themselves to be epiphenomena. The concept of interests has always been open to the potential criticism that the evidence for their existence is no more than an empirical abstraction from activity. Nature selects; the organism defined by a mechanistic theory may behave as if it selects, may feel as if it selects, as if it were interested, but the appearance of an interest need not imply that the interest is causally efficacious. Survival 'happens' and we may say, after the fact, that the individual had a conscious interest in surviving that ensured his particular survival. But the particulars of consciousness cannot be abstracted from behaviour or feeling alone; the specific genesis and operations of the interests must be delineated if we are to accept the concept as determinative in the way James intended.[7] The conclusion that 'mysterious',

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7. James claims that when the organism possesses an efficacious consciousness, survival can be certain before the fact. In the Principles, James writes:

> Considered merely physically, all that can be said of them [the reactions] is that if they occur in a certain way

(contd.)

'underlying', teleological units account for specific behaviours is not a sufficiently credible explanation, given James' commitment to naturalistic explanations.

When he set up the terms of his conception of consciousness, James recognized that "We ought to have some general term by which to designate all states of consciousness merely as such and apart from their particular quality or cognitive function (James, 1890, 1, p. 185). The terms he selected were feeling and thought (see James, 1890, 1, p. 186). We have already shown that James did not include the interests as types of feelings or thoughts. Thus, all that we can conclude is that James did not consistently intend to use the hypothesis as an integral part of his psychology, and this conclusion would correlate with his contention that the interests are 'mysterious'. In placing positivistic limitations on what psychology was to include he wrote: "Psychology, the science of finite individual minds, assumes as its data (1) thoughts and feelings, and (2) a physical world in time and space with which they coexist and which

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7. (contd.)
> survival will as a matter of fact prove to be their incidental consequence. The organs themselves, and all the rest of the physical world, will, however, all the time be quite indifferent to this consequence, and would quite as cheerfully, the circumstances changed, compass the animals' destruction. In a word, survival can enter into a purely physiological discussion only as a hypothesis made by an onlooker about the future. But the moment you bring a consciousness into the midst, survival ceases to be a mere hypothesis. No longer is it "if survival is to occur, then so and so must brain and other organs work". It has now become an imperative decree: "survival shall occur, and therefore organs must so work!" Real ends appear for the first time on the world's stage (James, 1890, 1, p. 141).

This chapter is restricted to the question of whether the interests, as James defined them, give adequate support to statements like the above. It must be noted that it does not attempt to deal with the viability of James' larger and later conception of the efficacious consciousness. Such a task requires extensive analysis of James' theories of perception and conception, and this will be undertaken in the next chapter.

(3) they know"(James, 1890, 1, p. vi). Interests are excluded and insofar as they cannot be embodied in feelings and thoughts (apart from their role in the 'fringe' of the stream of consciousness), would seem even to be precluded. In his later writings, James reverts again and again to renewed discussion of the nature of percepts and concepts as the fundamental units of the developing consciousness interacting with the world, without any separate reference to interests.[8] We can conclude, then, that James ceased to give serious expression to the doctrine that interests are the fundamental units of conscious selection, underlying the feelings themselves, after the Principles.

So what function was served by the interest hypothesis and why do we need to look at it at all? The theory of interests, as a basis to found a psychology on, was unsuccessful--indeed, it is doubtful that James long intended to do so anyway. But the doctrine itself, and the reasons that it was unsuccessful, are of great importance in coming to an overall assessment of James' thought. The problems with interests and their dualistic basis recur on a grander scale in James' delineation of the more systematically defined mental faculties such as belief and volition. In both cases, it will be shown that James' model of consciousness can be viewed structurally as a hierarchical, unified system, while operationally, the dualism is

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8. See James, 1890, 1, pp. 459-482; James, 1890, 2, pp. 76-133, 134-282, 283-324; James, 1902/1923, pp. 53-54; James, 1909/1967, pp. 143-217, 231-261, 328-330; James, 1912/1967, pp. 11-19, 33, 35, 52-57, 64-86, 158, 196-205; James, 1911, pp. 47-112, 166-219; James, 1907/1913, pp. 128, 172, 210-211, 244-245; and James, 1909, pp. 1-50, 63, 100, 104-114. The meaning of truth is mostly about cognition; as it was written in response to comments and criticisms James received on the earlier Pragmatism, it is important in the present context that in order to support his philosophy, James reverted to discussions of how the individual comes to know the world.

apparent in the opposing functions of each faculty. Moreover, it will be shown that the structural unity of consciousness is maintained by the vehicle of the stream of consciousness so that each idea carries its own impetus for action. At the same time, whether any idea will actually be enacted depends upon the function fulfilled by the particular idea in facilitating the individual's adjustment to the external world, or correspondingly, in facilitating his attempts to 'transcend' that world, through the implementation of novel ideas or acts of will.

An analysis of James' interest hypothesis is valuable in this context because the available material is extremely limited: the interest theory can thus represent a microcosm within the macrocosm of James' system. The problems that arise in the analysis of the theory of interests reappear in James' broader, more systemative psychology and philosophy. The difficulties encountered in attempting to determine the relationship of the interests to the rest of conscious activity are repeated when we come to consider the relationships between the various mental 'faculties' within the stream of thought, and to try to determine how one particular idea is chosen for enactment against competing ideas. The weaknesses in the theory of interests can thus serve as a key to understanding much of James' more systematic work, and the analysis of these weaknesses may help to determine a methodology for examining the whole corpus of his thought.

James' philosophy is built upon the various strands of his psychology. The world he creates is a particularly 'humanistic' world; pragmatism and radical empiricism take their shape from James' conception of consciousness. Therefore an understanding of James' psychology and his first attempts to work out a context for that psychology are basic to any analysis of the later philosophy.

And if the doctrine that consciousness is efficacious because it is interested was problematical, 'intuitive', 'unscientific', and ontologically 'mysterious'--perhaps to such an extent that James himself failed to expand it and make it an integral part of his psychology--it was productive as well. James explicitly developed the doctrine as a rebuttal to Spencer and the declared automatists (see James, 1878/1920, pp. 43-68; and James, 1879, pp. 1-22). If he was to develop a concept of consciousness that was both efficacious and freed of the limits of psychological hedonism, it was still necessary for him to find some means of expressing his viewpoint in a way that was compatible with Darwinian theory and current neurophysiology. James' problem was to find some means of describing consciousness as fundamentally and intrinsically efficacious. The idea that consciousness was interested served the initial purpose of giving James a means of polemicizing against automaton theory. At the same time, it focused his work on the fundamental units of consciousness, so that he was able to go on to develop a broad psychological theory where consciousness was fundamentally efficacious and where habit formation was a product of the first purposive interactions of the individual with the world. Initially, he hoped that the conception of an interested consciousness would ensure that true voluntary action was as 'naturalistic' and pervasive as automatic behaviour. It was not an easy task.

To conclude then, the idea that consciousness is interested, selective, and efficacious, marks James' break with the earlier physiologically deterministic associationist psychology. It is also James' first attempt at a concept of mind which will grow from here, through many transitions, into a psychology that will move evolutionary ideas, as we define them today, into philosophy. This perhaps

accounts for the interest doctrine's respected place in the literature.[9] The idea that consciousness is interested is the beginning of James' attempt to create a new and comprehensive world-view. Both as the first expression of the concerns that dominated James' mature thought, and as the first example of the flaws that prevented his achieving the synthesis he desired, the importance of the theory of interests cannot be overestimated.

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9. See Brett, 1942, p. 82; Perry, 1916, pp. 350-351; Knox, 1914, pp. 14-23; Thayer, 1968, p. 143; Reck, 1967, p.27; Roth, 1969, pp. 30-31; Wild, 1969, pp. 12-20; and Dooley, 1974. Dooley initially questions the validity of James' interest hypothesis (see Dooley, 1974, pp. 8-9), but later allows it to stand as a fundamental part of James' epistemology (see Dooley, 1974, pp. 48-49). The works cited were selected as representative examples of how the interest hypothesis has fared in the literature. While these writers vary in their enthusiasm for the theory of interests (some merely describe the interest hypothesis as a part of James' psychology and others see it as a substantial breakthrough in philosophy), none of them disputes its validity and it therefore stands unchallenged in the literature.

CHAPTER 3

FEELINGS, PERCEPTS, AND CONCEPTS

Introduction

The claim was made above (see Chap. 2, pp. 126-128), that James did not intend to use the interest theory as the basis for his broad systematic conception of consciousness, and that he chose instead to define the units of thought or sensation as 'feelings' or 'thoughts' (see James, 1890, 1, pp. 186-187). James' decision to use feelings as the basic units of consciousness thus constitutes the real starting point of his systematic theory of consciousness. It is now time to begin the analysis of James' conception of consciousness, and this chapter will concentrate on an analysis of the structure of consciousness as James developed it in the Principles. This conception of consciousness was to provide the underlying structures for his later philosophy, so that it occupies a fundamental place in James' work. James was attempting to create a new model of consciousness and it is therefore important to examine his reconstruction in light of his reactions to the earlier pschological models; he was to reject many of the assumptions of the empiricist tradition in particular, and to replace them with reconstructions of his own. Darwin and Renouvier provided the context for his dissatisfaction with the empiricist models; they also provided James with a positive framework for his reconstruction, so that James' conception of consciousness must be discussed in terms of his rejection of the empiricist model and his acceptance of Darwin and Renouvier.

James' definition of feelings or thoughts as the basic units of consciousness will be analyzed. It will be shown that James constructed the basic units of consciousness so that the objective

components were indistinguishable--on an introspective level at least--from the subjective components. Feelings are irreducible wholes according to James, and it will be shown that the unity of thought could only be maintained as long as James ratified the subject-object, mind-matter, distinction in his psychology.

In addition to defining the basic units of consciousness as feelings or thoughts, James developed a broad, systematic account of the structure of consciousness itself. This was the stream of consciousness, composed of feelings or thoughts, but also constructed to reflect James' notion of what consciousness as a whole was really like. The characteristics of the stream of consciousness will therefore be discussed, with emphasis on the evolutionary character of the stream of consciousness. This chapter will concentrate on the structures of consciousness as opposed to the functions[1] of consciousness. The structures of consciousness must be distinguished from its functions because James was concerned with the development of an efficacious model of consciousness: this meant that he was forced into a reevaluation of what kind of construction was necessary to enable consciousness to have a 'voice' in determining the individual's actions, while at the same time allowing for the 'coercive' properties of the external world.

James concentrated much of his attention on two categories of feeling--these were percepts and concepts. This chapter will therefore discuss the genesis of percepts and concepts out of the originally undifferentiated feelings, and the relationship between percepts and concepts as cognitive structures. This discussion at times

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1. The functions of consciousness will be discussed in the following three chapters.

will take us beyond the Principles and into James' pragmatism and final philosophy when James' philosophy can be used to extend and clarify the discussion of the Principles.

The Definition of Feelings or Thoughts

James' selection of 'feeling' or 'thought' as the term to describe the basic units of consciousness was predicated on the necessity of choosing a term which would include the sensational aspects of consciousness as well as its cognitive properties. James came to the conclusion that there was no one term which was free of other connotations and which covered both sensation and thought indifferently:

> In this quandary we can make no definitive choice, but must, according to the convenience of the context, use sometimes one, sometimes another of the synonyms that have been mentioned. My own partiality is for either FEELING or THOUGHT. I shall probably often use both words in a wider sense than usual, and alternatively startle two classes of readers by their unusual sound; but if the connection makes it clear that mental states at large, irrespective of their kind, are meant, this will do no harm, and may even do some good (James, 1890, 1, pp. 186-187).

As such, the term used to connote these mental states (that is, feelings or thoughts) in itself as yet implies nothing about the function or direction of mental states. The proper objects of study for the psychologist are:

> the minds of distinct individuals inhabiting definite portions of a real space and of a real time. With any other sort of mind, Absolute Intelligence, Mind unattached to a particular body, or Mind not subject to the course of time, the psychologist as such has nothing to do (James, 1890, 1, p. 183).

Apart from the specification that psychologists shall study consciousness as its exists in particular individuals, James' selection of terms to describe the contents of consciousness says nothing about

what that consciousness is--whether or not it is active, purposive, passive, or contemplative.

James was indebted to Renouvier for his definition of thought or feeling, for it was Renouvier who insisted that perceptions or phenomenal representations were inherently dualistic in that the subjective and objective aspects of the percept were irreducibly mixed together (see Perry, 1935/1974, 1, pp. 654-659; see also Boas, 1967, pp. 179-181). James thus stated that "Whatever things are thought in relation are thought from the outset in a unity, in a single pulse of subjectivity, a single psychosis, a feeling or state of mind" (James, 1890, 1, p. 278). The thought is to be taken as a whole, as an individual unity in consciousness and thoughts can therefore be described in terms of their objects:

> The object of every thought, then, is neither more nor less than all that the thought thinks, exactly as the thought thinks it, however complicated the matter, and however symbolic the manner of thinking may be (James, 1890, 1, p. 276).

The distinction between the structural and functional nature of thought is related to this definition of what the thought is. The subjective and objective aspects of the thought are irreducibly combined at the structural level and at the experiential level so that any real distinctions between thoughts can only be made at the functional level. Thus, James claimed that feelings could be cognitive or non-cognitive: "What a thought <u>is</u>, and what it may be developed into, or explained to stand for, and be equivalent to, are two things, not one" (James, 1890, 1, p. 279; see also p. 217). This operational definition of what a thought was, as distinct from its cognitive import, or functional significance, provided James with the foundation for his theory of consciousness. The structure of the thought is described in terms of the thought's relations to

other thoughts, objects, or relations. The thought of a particular object cannot, moreover, be equated with the physical object because James specifically denied "that in the thought any parts can be found corresponding to the object's parts" (James, 1890, 1, p. 279).

James' primary goal was to construct an efficacious model of the mind, and he aimed to do this by showing that the mind had an active role in the production of every feeling, sensation, or thought. Objects were not simply experienced or recognized; they were recognized or experienced in particular and unique ways, depending on the selective and intentional state of consciousness at any given moment. Furthermore, if all feelings were structurally equivalent--that is, if James was able to construct a definition which would describe all forms of mental activity indifferently--then he was well on the road towards the construction of an efficacious model of consciousness in the sense that conscious or intelligent involvement was by definition, present during every form that feeling or thought could take. He was looking for a system that would support his earlier teleological statement that "Right or intelligent mental action consists in the establishment, corresponding to outward relations, of such inward relations and reactions as will favour the survival of the thinker, or, at least, his physical well-being" (James, 1878/1920, p. 49). His reworking of Renouvier's argument that subjective and objective aspects of the phenomenal representation were indistinguishable gave him the means of beginning to realize his evolutionary goal.

But there is a serious problem with this definition of thought in relation to James' account of cognition. James insisted that thoughts were cognitive of the physical world. His insistence, however, that the subjective and objective aspects of the thought were

indistinguishable in conjunction with his proviso that the objects of thought were in no way like physical objects, raises problems of how the physical world is known, and what can be known about it. It will be shown below that James preserved his unitary definition of thought only through ratifying the subject-object, mind-matter distinctions in his psychology so that the claim that thoughts are cognitive--and that they are cognitive of physical particulars --is problematic. This problem does not admit of solution in this chapter; the following three chapters are largely devoted to James' attempts to resolve it, and for the present, effort will be concentrated on examining James' psychological conception of consciousness from a structural perspective.

James' Reaction Against Elementarism in his Construction of Feelings or Thoughts

James reacted against the elementarism of James Mill's and John Stuart Mill's reductionist explanations of ideation, insisting that thoughts were objects and not complexes of ideas, and stressing the unitary, non-reducible structure of the thought. James expresses James Mill's hypothesis as follows: "whenever an object of thought contains many elements, the thought itself must be made up of just as many ideas, one idea for each element, and all fused together in appearance, but really separate" (James, 1890, 1, p. 277; see also Mill, 1869, 1, pp. 264-266). Mill's theory makes feeling or thought dependent upon a kind of passive sensationalism; that is, information is received and combined according to the laws of association. The structure and meaning of the thought is dependent on this combination:

> Words become significant purely by association. A word

> is pronounced in conjunction with an idea; it is pronounced again and again; and, by degrees, the idea and the word become so associated, that the one can never occur without the other. To take first the example of an individual object. The word, St. Paul's, has been so often named in conjunction with the idea of a particular building, that the word, St. Paul's, never occurs without calling up the idea of the building, nor the idea of the building without calling up the name, St. Paul's. The effect of association is similarly exemplified in connecting the visible mark with the audible (Mill, 1869, 1, p. 262).

The process wherein complex ideas are derived appears to be additive, so that an indefinite number of simple ideas are combined to form one complex idea. The meaning of the complex idea therefore resides in the addition of simple ideas:

> There can be no difficulty in admitting that assocation does form the ideas of an indefinite number of individuals into one complex idea; because it is an acknowledged fact. Have we not the idea of an army? And is not that precisely the ideas of an indefinite number of men formed into one idea? (Mill, 1869, 1, p. 264)

James argued instead that a particular thought could not be reduced nor combined with another without a qualitative change in its meaning. If the thought is broken up into elements or ideas it no longer exists as that thought. James repeates this injunction throughout the Principles:

> There are, then, mechanical conditions on which thought depends, and which, to say the least, determine the order in which is presented the content or material for her comparisons, selections, and decisions. ...
>
> But the whole historic doctrine of psychological association is tainted with one huge error--that of the construction of our thoughts out of the compounding of themselves together of immutable and incessantly recurring 'simple ideas'. It is the cohesion of these which the 'principles of association' are considered to account for. ...
>
> Association, so far as the word stands for an effect, is between THINGS THOUGHT OF--it is THINGS, not ideas which are associated in the mind. We ought to talk of the association of objects, not of the association of ideas. And so far as association stands for a cause, it is between processes in the brain--it is these which, by being associated in certain ways, determine what successive objects shall be thought (James, 1890, 1, pp. 553-554).

The importance of the distinction between associating ideas and associating objects is implicit in the contrast between Newtonian and post-Darwinian cosmology. Associationism relied upon the mechanical and chemical laws of Newtonian science; in J.S. Mill's reformulation of his father's theory, the laws of mind wherein complex ideas are generated out of simple ideas:

> are sometimes analogous to mechanical, but sometimes also to chemical laws. When many impressions or ideas are operating in the mind together, there sometimes takes place a process of a similar kind to chemical combination. When impressions have been so often experienced in conjunction, that each of them calls up readily and instantaneously the ideas of the whole group, those ideas sometimes melt and coalesce into one another, and appear not several ideas but one; in the same manner as when the seven prismatic colors are presented to the eye in rapid succession, the sensation produced is that of white. But in this last case it is correct to say that the seven colors when they rapidly follow one another generate white, but not that they actually are white; so it appears to me that the Complex Idea, formed by the blending together of several simpler ones, should, when it really appears simple (that is when the separate elements are not consciously distinguishable in it), be said to result from, or be generated by, the simple ideas, not to consist of them. ...These are cases of mental chemistry; in which it is possible to say that the simple ideas generate, rather than that they compose, the complex ones (Mill, 1843/1974, 8, VI, iv, pp. 853-854).

John Stuart Mill could describe the workings of mind as being analogous to chemical laws because he defined matter as the permanent possibilities of sensation (see Mill, 1872, p. 233). Matter, he believed, was "permanent and always the same while these [the sensations] are fugitive, variable, and alternately displace one another" (Mill, 1872, p. 235). Mill followed Berkeley in rejecting any possibility of epistemologically independent or separate access to things (see Schneewind, 1967, 5, p. 319); his definition of 'matter' as the permanent possibilities of sensation allowed him to avoid an ontological and epistemological gap between minds and things. Rather than existing as something outside and independent

of mind, matter is defined as certain stable ways in which the mind may be modified--that is, through the permanent possibilities of sensation. Why the possibilities of sensation were permanent remained a metaphysical question for Mill, and as such did not interfere with empirical observation and confirmation. The success of Newtonian theory in deriving laws for the workings of the physical universe lent order, and therefore justification, for the acceptance of, and belief in, the existence of 'permanent possibilities of sensation'.

But Darwin's interpretation of geological and biological data essentially changed all this. The geological record showed that land masses changed their shapes over time, while the fossil record (although incomplete) testified for the mutability of organic forms. Darwin's own biological data indicated that species changed over time.[2] The upshot was that 'permanent possibilities of sensation' ceased to be a workable concept for James, at least as far as 'the history of the race' was concerned. Given this emphasis on the impermanence of nature, complex ideas could no longer be guaranteed by physics and corresponding empirical observation. Instead, a definition of feeling, perception, and conception which was independent of the vagaries of the physical world was called for. The physical world could then theoretically be reconstructed from the structures of consciousness: this was James' aim and his treatment of feelings as irreducible objects was the first major step he took towards achieving it.

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2. The impact of these discoveries on Victorian thought is perhaps best expressed in popular form in Tennyson's "In Memoriam". For their impact on nineteenth century scientific thought see Milhauser, 1959, and Greene, 1959.

The Mind-brain Relationship and the Mind-dust Theory of Herbert Spencer

James was not only concerned with refuting elementarism as it appeared in the works of the Mills. He attacked the mind-dust theory as it appeared in Spencer's evolutionary associationism with equal fervour.[3] James was willing to admit that the causes of a single feeling, sensation, or thought could be, and often were, "multiple and discrete" (James, 1890, 1, p. 154). What he questioned was whether the "transformation, reduction or fusion" (James, 1890, 1, p. 154), took place at the conscious level, or at the physiological level (see James, 1890, 1, p. 154). Spencer argued that fusion took place in the mental world (see Spencer, 1870, 1, pp. 152-154). James insisted that the physiological evidence was against Spencer's view, and that fusion must occur in the physiological strata underlying consciousness (see James, 1890, 1, pp. 156-157). Furthermore, James argued that feelings could not be mixed as the mind-dust theory seemed to imply: "Moreover, if feelings can mix into a tertium quid, why do we not take a feeling of greenness and a feeling of redness, and make a feeling of yellowness out of them?"(James, 1890, 1, p. 157). And just as feelings could not be combined in consciousness at will, James found it equally unintelligible to suppose that "what seems like one feeling, of blueness for example, or of hatred, may really and unconsciously be ten thousand elementary feelings which do not resemble blueness or hatred at all".[4]

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3. (See James, 1890. 1, pp. 146-158). Basically, the mind-dust theory maintains that while material atoms fuse together to form matter, aboriginal mental atoms have similarly fused themselves into individual consciousnesses.

4. (James, 1890, 1, p. 157; see also Marshall, 1974, pp. 305-306, for an extended analysis regarding James' early rejection of the mind-dust theory).

Spencer likened consciousness to the feelings generated by 'nervous shocks' (see James, 1890, 1, p. 153; see also Spencer, 1870, 1, p. 152): nervous activity was directly felt, or experienced in consciousness which meant that no 'break' in the system needed to be accounted for. James was unwilling to accept this hypothesis and in his account, mind and brain are correlated activities, with the physiological processes underlying the conscious threshold (see Perry, 1935/1974, 2, p. 76). James makes a sharp distinction between the structures of consciousness and the structures of the nervous system so that his psychology is based on an explicit mind-body dualism (see James, 1890, 1, p. 182). This is a necessary step because it allows James to describe the functioning consciousness independently from its physiological correlates.

What distinguishes James most sharply from the first generation of evolutionists--for example, Spencer, Huxley and Tyndall--is his reluctance to subscribe to the notion that consciousness is a direct by-product of nervous activity. He shows again and again that the behaviour of an 'intact' conscious organism is qualitatively different from the behaviour of an animal which has undergone some kind of cortical ablation (see James, 1879, pp. 4-5; and James, 1890, 1, pp. 14-19, 77-78). The differences in behaviour between 'normal' and 'decorticated' organisms had traditionally been used to make a structural/functional distinction between the 'higher' and 'lower' nervous systems. But James drew different theoretical conclusions from that data than the automatists had. He describes the physical nervous system in terms of the mechanistic behaviour it promotes, and conjectures that consciousness exists to some degree in all nervous structures. Thus he explains the resumption of certain purposive activities in decorticated animals on the basis that:

> All the centres, in all animals, whilst they are in one aspect mechanisms, probably are, or at least once were, organs of consciousness in another, although the consciousness is doubtless much more developed in the hemispheres than it is anywhere else (James, 1890, 1, p. 78).

The nervous system can then be described from two structural view-points: it is the mechanical/physical system traditionally described by James' contemporaries, and it is the organ of consciousness. James is stressing the plasticity of the nervous system; in his view, it is a developing, mutable network, respondent to changes and growth describable in evolutionary terms. He does not deny that mechanical explanations can be applied to the nervous system per se--instead, he says that the nervous system lends itself to two modes of interpretation and claims that the mechanical model cannot be extended to describe consciousness while it can describe the structure of the physical organs of consciousness. Structurally speaking, James has departed from a strict sensory-motor approach (see James, 1890, 1, p. 79), while refusing to ratify the faculty psychology of Gall and the phrenologists.[5] Instead, James' mechanical/physiological nervous system is a continuous plastic structure. Differentiation in structure and function is explained by evolutionary postulates:

> All nervous centres have then in the first instance one essential function, that of 'intelligent' action. They feel, prefer one thing to another, and have 'ends'. Like all other organs, however, they evolve from ancestor to descendant, and their evolution takes two directions, the lower centres passing downwards into more unhesitating automatism, and the higher ones upwards into larger intellectuality. Thus it may appear that those functions which can safely grow uniform and fatal become least accompanied

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5. (See James, 1890, 1, pp. 27-28, 40-65). James bases his psychological interpretation of brain functioning on the physiological work of Broca, Ferrier, Hitzig, Goltz, Luciani, Loeb, Exner, Munk, Brown, Schaefer, Meynert, and Jackson.

> by mind, and that their organ, the spinal cord, becomes a more and more soulless machine; whilst on the contrary those functions which it benefits the animal to have adapted to delicate environing variations pass more and more to the hemispheres, whose anatomical structure and attendant consciousness grows more and more elaborate as zoological evolution proceeds (James, 1890, 1, p. 79).

The higher centres are distinguished by a consciousness which 'overrides' the mechanistic aspects of the nervous system:

> A priori analysis of both brain-action and conscious action shows us that if thelatter were efficacious it would, by its selective emphasis, make amends for the indeterminateness of the former; whilst the study a posteriori of the distribution of consciousness shows it to be exactly such as we might expect in an organ added for the sake of steering a nervous system grown too complex to regulate itself (James, 1890, 1, p. 144).

Consciousness is distinctly separated from the mechanistic aspects of the nervous system. James insists that consciousness is not simply a by-product of neurophysiological activity but can be, and must be, treated as a distinct organ in itself. The admittedly dualistic character of this approach makes it difficult to see how James can defend his view of consciousness within the parameters of a physiological paradigm.

However, James is convinced that physiological investigations yield data conducive to the treatment of consciousness as an organ in itself. James agreed with earlier physiologists that the qualitative differences in behaviour between 'whole' and 'decorticated' organisms were critical. The older physiologists took the behavioural differences as evidence for a qualitative separation between the higher and lower centres--and it is this absolute break in the nervous system that James objects to. James hypothesizes that in regard to their ability to act as organs of consciousness, the nervous structures are fairly plastic. He is also insisting upon the unity of the system as a whole and emphasizing the need to consider consciousness

as the controlling organ of an otherwise mechanistic system. If a break need be made to distinguish efficacious processes from automatic processes, James argues that it must be made between consciousness and the underlying physical system, rather than within the physical system, and this is the basis of his quarrel with Spencer.

James argues against the elementaristic mind-dust theory, particularly Spencer's interpretation, claiming that:

> If each neural shock gives rise to its own psychic shock, and the psychic shocks then combine, it would be impossible to understand why severing one part of the central nervous system from another should break up the integrity of consciousness. The cut has nothing to do with the psychic world. The atoms of mind-stuff ought to float off from the nerve matter on either side of it, and come together over it and fuse, just as well as if it had not been made. We know, however, that they do not (James, 1890, 1, p. 157).

James makes two relevant points here: he establishes the dependence of consciousness upon brain states while at the same time attempting to show that feelings must be wholes in themselves; they do not 'reconstitute' at a higher level when their channels are disrupted. James then goes on to make the distinction between the relations that objects have with one another and the qualitative status of the object itself. While atoms 'combine' to produce new substances, James argues that the new substance is really old atoms in new relations to one another: the atoms do not "sum themselves together. Each remains in the sum, what it always was; and the sum itself exists only <u>for a bystander</u> who happens to overlook the units and to apprehend the sum as such" (James, 1890, 1, pp. 158-159). The same concept is applied to feelings--"Atoms of feeling cannot compose higher feelings" (James, 1890, 1, p. 161). Each atom of feeling remains an independent feeling in itself. This is why feelings are not, according to James, 'reconstituted' at higher physiological levels. There is nothing in the percept of an object to imply that the object is

composed of discrete atoms. Nor do feelings admit an intuitive breakdown as part of the experience of the feeling itself. James regards any ultimate reductionist schema as the product of sophisticated conceptualization rather than an intuitive feeling of the nature of things.

James' insistence that fusion cannot take place at the conscious level raises some interesting questions about Spencer's theory of consciousness in particular and theories of consciousness in general. Spencer contends that fusion takes place at the conscious level and this must mean that the fusion is in some way experienced by the organism. It at least means that some 'change' takes place in the dim region between physiological 'experience' and the 'feeling' or 'sensation' itself and this change must be regarded as a qualitative change. Spencer admits that experiences of sensations are "simple, homogeneous, unanalyzable, or of inscrutable natures" (Spencer, 1870, 1, p. 148). He claims, however, that careful analysis will show that the elements of musical tones can be slowed down so that they are experienced in their simple parts, and that other feelings can be similarly broken down (see Spencer, 1870, 1, p. 148). Spencer does say that the fusion of elements into feelings is not normally experienced: the point is, in cases where fusion can be experienced, whether or not the two experiences are qualitative equivalent. That is, do we have any feeling of the 'parts' that make up the tone when we hear the tone, or, when we first hear the parts, and are then given the tone, can we say that indeed, those parts compose the tone? James denies that we can or do (see James, 1890, 1, p. 157), adding that if the elements of a physical process (for example, striking a pendulum, blowing on a fire), are speeded up or slowed down sufficiently, the quality of the physical

reaction is changed, and he believes that the same analogy can be applied to the feelings (see James, 1890, 1, pp. 155-156). James is arguing that qualitative 'cuts' must be made in the continuum of experience--later in his radical empiricism, he will argue that the subject-object distinction is not a real qualitative distinction, but he is then left with the problem of qualitative differences in experience to deal with. In the Principles, however, he is prepared to argue, as the core of his dualistic position, that qualitative cuts must be made between physiological 'nerve-firings' and mental experience, between mind and body, between subject and object.

The dialogue between James and Spencer is important not only because it describes James' reason for believing that feelings are irreducible wholes, but because it raises the broader problem as to whether qualitative separations can be made at all in analyzing the nature of the subject's relations to the objects that he perceives, and conceptualizes. It also shows that if 'qualitative cuts' must in the end be made, the places where they are to be made are not 'ontologically obvious'.

The World of Pure Experience

In defining 'feelings' or 'thoughts', James had to take the properties of the external world into account. If John Stuart Mill was convinced that there were permanent possibilities of sensation (see Mill, 1872, pp. 225-239), James was not. Like Mill, he believed that we encounter the same objects again and again, so that we believe in their independent existence. Where he differed from Mill was in his ideas about the way in which objects came to be cognized as permanent and independent. To this end, he wrote:

If my reader can succeed in abstracting from all

> conceptual interpretation and lapse back into his immediate sensible life at this very moment, he will find it to be what someone has called a big blooming buzzing confusion, as free from contradiction in its 'much-at-oneness' as it is all alive and evidently there.
>
> Out of this aboriginal sensible muchness attention carves out objects, which conception then names and identifies forever (James, 1911, p. 50; see also James, 1890, 1, p. 488 for the earlier expression of this view).

According to James, the individual begins his life with a 'sensible awareness' of 'pure experience'--he is aware at the sensational level that a reality exists, external to himself, but he can attach no particular meaning to external events. His initial impressions are kaleidescopic--patches of colour move against one another, sounds merge, diverge, and buzz together. Because the individual can as yet attach no particular meaning to external events, his impressions are of unity. The 'big blooming buzzing confusion' is 'one': separation of 'pure experience' into meaningful events comes as a result of the individual's interaction with the external world, and his subsequent imposition of his feelings and unique experiences on reality; this in turn, leads to his developing conceptions about that reality. As events and objects are thereby separated from the initial mass presentation, unity gives way to separateness and the world of 'pure experience' as an experience ceases to exist. Portions of the initial flux are separated out as being worthy of attention while other portions recede further into the background and the individual ceases for all practical purposes, to attend to them at all. For James, monism is the primitive experience, pluralism the sophisticated view, for feelings of pluralism are the result of interactions with reality. The flux of reality gradually takes on a kind of 'four-dimensionality' as its elements are separated into distinct objects and relations by the perceiving consciousness. The process is interactive; if the individual imposes his consciousness upon

reality, that same reality coerces consciousness into particular conceptions as well.[6]

The interaction between mind and the world which makes it possible to separate the 'big blooming buzzing confusion' into meaningful realities is a major theme in James' psychological and philosophical writings. James' paradigm of cognitive development is the reverse of the associationist structure: experience must be broken down by the individual so that objects and events can be recombined into meaningful conceptions (see James, 1890, 1, p. 465). James' radical view of the conceptual process is interrelated with his definition of feelings or thoughts--that is: "the object of your thought is really its entire content or deliverance, neither more nor less" (James, 1890, 1, p. 275).

In his pragmatism, James hypothesizes that the 'truth' or 'falsity' of an idea is dependent on the existence of an actual object or relation which corresponds to the thought, and the meaning of any particular feeling has to be 'realized' for the thinker (see James, 1909, pp. 103-105). James had not begun to systematically develop his pragmatic philosophy while writing the Principles but there is a strong pragmatic motif running through the Principles; what was to become the pragmatism is foreshadowed in his contruction of consciousness. Thus, the function of thought or feeling is to promote the separation and recombination of reality into meaningfull patterns and to facilitate meaningful action on the part of the individual. An atomistic conception of thought cannot fulfil these demands because the associationist system was based on the notion

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6. The concept of a world of pure experience and the means through which the individual comes to know reality is discussed in Chaps. 4 and 8.

that complex ideas were derived through the compounding of simple ideas. James' reality is initially monistic and this precludes a conception of mind that insists that simple ideas provide the base for complex ideas. In James' world simple elements are not intuitively distinguishable as such: the 'cuts' that determine the breakdown of reality are products of experience, and, eventually, of sophisticated conceptualization.

James was led to define thoughts as irreducible wholes for he believed that the initial experience of the individual was of such a nature that it precluded the summation of elements into complex ideas. The sensation, feeling, or thought was experienced as a whole; the cognitive value of the thought, or its functional significance for the individual was a separate issue. The function of a thought may be determined, often <u>is</u> determined, by the structure of the thought, but what happens as a result of thinking the thought is distinguished from the thought itself. What a thought <u>is</u> and what it leads to are two things, not one. The structural equivalence of feelings along with their functional differentiation is the real basis of James' efficacious consciousness. If the function of feelings is to separate the world of pure experience into meaningful objects and relations, the feelings must be structured so as to facilitate the process. They need not always be cognitive--whether or not they <u>are</u> cognitive is dependent upon there being actual independent objects and relations to which they correspond. But they must be structured so that their objects will have potentially recognizable correlates in the external world. And if their objects do not make a fit with anything in the world of reality, those objects of the feelings must still be recognizable so that the feeling can be interpreted and dismissed as a falsity or dream (see James, 1909, p. 28).

Thus, the world of pure experience comes to be known.

Evolutionary Demands on the Construction of the Feelings or Thoughts

If consciousness was to be efficacious, then feelings or thoughts had the function of 'pushing' the individual into the world: "All feeling is for the sake of action" (James, 1909, p. 22). But that world, in James' new cosmology, was beginning to take on different dimensions from those of the orderly mathematically defined Newtonian cosmos. While James dismissed the notion that the mind was a complete tabula rasa, arguing instead that it was structured towards specific tendencies as a result of the evolutionary process (see James, 1890, 1, p. 76), he explicitly denied that the external world existed in any intuitively logical and permanent form for consciousness (see James, 1890, 1, p. 488). Moreover, he had to confront the problem of whether or not external realities are constant:

> What is got twice is the same OBJECT. We hear the same note over and over again; we see the same quality of green, or smell the same objective perfume, or experience the same species of pain. The realities, concrete and abstract, physical and ideal, whose permanent existence we believe in, seem to be constantly coming up again before our thought, and lead us, in our carelessness, to suppose that our 'ideas' of them are the same ideas. When we come, some time later, to the chapter on Perception, we shall see how inveterate is our habit of not attending to sensations as subjective facts, but of simply using them as stepping-stones to pass over to the recognition of the realities whose presence they reveal (James, 1890, 1, p. 231).

This passage initially seems to imply that there are indeed permanent possibilities of sensation; objects are constant while the 'subjective' portion of the thought varies. In fact, the situation is far more complex than this, as the latter part of the above passage shows. The 'object' of the thought or sensation remains constant, while the thought or sensation is never repeated exactly

in consciousness (see James, 1890, 1, p. 232). The physical object which is responsible for the thought or sensation is in fact the same object that was sensed or thought about before, but that object itself may be in a constant process of change so that:

> The grass out of the window now looks to me of the same green in the sun as in the shade, and yet a painter would have to paint one part of it dark brown, another part bright yellow, to give its real sensational effect. We take no heed, as a rule, of the different way in which the same things look and sound and smell at different distances and under different circumstances (James, 1890, 1, p. 231).

The problem here is to determine whether the changes that objects appear to exhibit when thoughts and sensations are subjected to introspective analysis are significant changes in the objects themselves or whether these changes are only significant in terms of our relationships to the objects. James at times implies that the physical world is undergoing constant and real changes, independent of the sentient observer: "Even now, the world may be a place in which the same thing never did and never will come twice" (James, 1890, 1, p. 460). The analysis of the permanent or mutable status of the physical world occupies a significant portion of the discussion on James' conception of the worlds of reality, given in Chap. 4. For the present, however, it is sufficient to note that James had not yet come to the point of using sensational or perceptual experience as the 'data' for insisting that the physical world really was in a process of constant change and evolution. This was to come later, in his radical empiricism and his final philosophy. The changes that could be 'observed' through the aegis of sensation and perception might possibly reveal real changes in the structures of the physical world, or they might not--that is, the phenomenal shifts in the appearance of objects might well be incidental to real, physical changes in the world. From the perspective of the observer,

however, changes in the objects are experienced.

Thus James has taken a significant step in meeting the evolutionary demands for a mutable physical world: he regards the phenomenal shifts in the appearances of objects as significant for his theory of consciousness and perception. If the observer is inclined to ignore differences in sensation when he meets the same object on different occasions, it is still significant that he does not in fact 'get' the same sensation twice. The thought or sensation must be taken as an irreducible whole to ensure that the object is in fact recognized on subsequent occasions, despite changes in its phenomenal appearance.

Any given thought therefore has two functions: it enables the individual to recognize the object as the same object he last encountered. But it also enables him to recognize any changes that the object has undergone since his last encounter with it. And these changes may be significant for the individual. Darwin emphasized the importance of adaptation, adjustment, competition, and survival as the primary demands made on the individual (see Darwin, 1859/1977, pp. 114, 435, 441-445). If consciousness was really to be efficacious in ensuring survival and adjustment, then the recognition of the shift in the appearances of objects could be critical to the survival and adjustment of the observer at any given moment. Furthermore, the 'subjective' characteristics of the thought or sensation are as critical as the recognition of the object and its particular appearance at any given time. The secondary qualities of objects and events--those properties which were devalued during the scientific revolution in terms of their ability to provide 'true' information about the world, suddenly became of immense importance to James' new paradigm. Thoughts or sensations had to be considered as 'wholes'

because the feeling included, or was fringed by, emotive aspects as well as purely cognitive information.

If all feeling exists for the sake of action as James was to claim in his pragmatism (see James, 1909, p.22), the precise epistemological status of any given feeling is decided only when its interactive relationship with reality is decided. And whether any particular feeling will be transformed into action, and what the act will be, depends upon the emotive as well as the objective qualities of the feeling. The structure of feelings as whole units of consciousness--as complete particulars in themselves--is necessary if James is going to distinguish them epistemologically in terms of function. James believes that conceptions are determined by the individual's unique experiences in the world (see James, 1890, 1, pp. 460, 465). This means that the 'meaning' of an object is not predetermined--meaning resides in the particular piece of experience.

Given that the world is always changing (at the phenomenal level at least), and that the particular meaning of an object at any given time is selected from the possibilities inherent within the object, it is necessary for the definition of thought to include those aspects of the object or situation which are important to the individual at the time. Survival and adjustment depend on this. Today, the 'meaning' of the piece of paper in front of me may be that I can write on it; tomorrow, that I may use it to start a fire (see James, 1890, 2, p. 333). It remains the same physical object but its 'meaning' changes according to my needs; the thought of the object is qualitatively different in the two cases. The 'meaning' is not added on to the percept--it is part of what individualizes each percept from other, similar perceptions. The subjective aspect of the thought is as much a part of the percept as the

objective part. To make this clearer, James writes:

> There is no property ABSOLUTELY essential to any one thing. The same property which figures as the essence of a thing on one occasion becomes a very inessential feature upon another (James, 1890, 2, p. 333).

But this statement leads us into James' argument that consciousness is essentially selective. It is therefore necessary to begin the analysis of the stream of consciousness in order to show how James structured consciousness so that selection became an integral and necessary characteristic of the mind in its relations with the worlds of reality.

The Evolutionary Character of the Stream of Consciousness

Once James had decided that feelings or thoughts were holistic entities, his next task was to find a means of describing their relationships to one another. He was dissatisfied with the laws of association as a means of accounting thoughts to each other.

> But the whole historic doctrine of psychological association is tainted with one huge error--that of the construction of our thoughts out of the compounding of themselves together of immutable and incessantly recurring 'simple ideas'. It is the cohesion of these which the 'principles of association' are considered to account for. In Chapters VI and IX we saw abundant reasons for treating the doctrine of simple ideas or psychic atoms as mythological; and, in all that follows, our problem will be to keep whatever truths the associationist doctrine has caught sight of without weighing it down with the untenable incumbrance that the association is between 'ideas' (James, 1890),1, pp. 553-554).

James' solution to the problem was to become one of his most fruitful psychological constructions; his efforts soon resulted in the famous stream of consciousness. While every thought or feeling is a 'unity' in itself, the thought is not a 'simple' object--"Every definite image in the mind is steeped and dyed in the free water that flows around it" (James, 1890, 1, p. 255). Thus, an object of thought is surrounded by co-existing states of consciousness and

takes it emphasis from those co-existing feelings.

The stream of thought was designed as the 'structure' of the thought processes and it was constructed in response to the same 'demands' just described which first led James to define thoughts as indivisible objects. The rationale for James' definition of feeling is to be found in the evolutionary 'core' of his psychology. That is, he found profound difficulties in describing consciousness according to the associationist model because in his mind, the assumptions about the function of consciousness that could be drawn from Darwinian theory conflicted with the premises of associationism. James' construction of consciousness is therefore a reaction against the broad theory of associationism. At the same time, it is a productive attempt to generate a new theory of mind, and must be regarded as a positive expression and expansion of evolutionary theory.

Darwin's theory is a somewhat curious construction; on the one hand, Darwin fervently wishes to preserve the uniformity of nature (see Young, 1971, p. 500) in compliance with the demands of the Newtonian world-view, At the same time, there are foreshadowings of a relativistic view of nature in The origin of species. Darwin tried hard to show that the relativistic ideas could be reconciled with the old assumptions (see Darwin, 1859/1977, pp. 437, 460); nevertheless, the work exhibits a productive tension between the 'old' and what were to become the 'new' assumptions. And it fell to James and his contemporaries to tease out the implications for a new theory of mind and nature from Darwin's theory. The stream of consciousness is therefore important historically for it represents the first major theoretical attempt to define the structure of consciousness in terms compatible with the 'new' assumptions implicit in Darwin's work.

If consciousness was to have any functional utility, its structural characteristics had to be directed towards the recognition,

interpretation, and satisfaction of internal and external demands. As Reck (see Reck, 1967, p. 23), points out, Spencer was the first to realize the importance of mind in survival; the whole theory of evolutionary associationism is based on the premise that mind has gradually evolved to facilitate the adjustment of inner to outer relations. James' disagreements with Spencer were profound (see, for example, Reck, 1967, p. 24), and he often uses Spencer as a vehicle for his wide-ranging attack on the elementarism and passive sensationalism that came to characterize British empiricism. But the idea that consciousness is somehow crucial in evolutionary development comes from Spencer. James therefore followed Spencer's lead when he worked out an alternative structure of consciousness to fulfill evolutionary demands as he derived them from Darwin.

According to James, an efficacious consciousness is necessary to facilitate efficient satisfaction of biological demands and James claimed that the lower brain centres were too 'limited' to trigger the numerous actions required in purposive adjustment in the higher species, while the 'higher' centres were too unstable. An organ of consciousness that could fill these demands was required: thus, the stream of consciousness was structured so that it is personal, constantly changing, sensibly continuous, cognitive, and selective, or interested (James, 1890, 1, p. 225).

The stream of consciousness is primarily structured to cope with the internal instabilities of the individual and the external instabilities that are perceived in the physical world. The justification for considering the stream of thought as an evolutionary concept lies in James' conclusion that the 'physical' organism and the environment are unstable. For the earlier generation, the only recognized instability resided in the mental processes themselves (see J. S. Mill,

1872, p. 235, quoted above, p. 140). The world contained permanent possibilities of sensation while the internal, or physical states of the organism were described by mechanical analogies. The impact of Darwinian ideas on James' thought is responsible for his 'reversal' of this order so that James was to conclude that concepts were the permanent, static, and stable elements in an otherwise unstable system (see James, 1890, 1, pp. 459-462). This is why consciousness stands at the centre of James' universe; as his philosophy was developed, the external world became more and more overtly discontinuous, and the 'organizing', 'permanently conceptualizing' capacities of consciousness, interacting with immediate 'percepts' of reality, were emphasized as the only certain paths to knowledge, and in fact, to the course of development the external world will take. Perry makes some interesting points in regard to evolutionism in James' philosophy:

> In the early phase of his doctrine of evolution James was dominated by Darwin. His main concern was to demonstrate the "spontaneous variation" of life and mind. Through this breach in an otherwise mechanical world poured the whole flow of his predilection for subjectivity and freedom. He believed that Spencer had definitively failed in his more pretentious attempt to trace the origins of life and mind. James was here willing, provisionally at least, to fall back on the hypothesis of mechanism. With this earlier Darwinian phase of his thought is to be contrasted the radical evolutionism of his later years, when, aided and abetted by Charles Peirce, he extended the notion of spontaneous variation to the whole of nature, and proclaimed the view that the physical order was itself an effect of progressive selection (Perry, 1935/1974, 1, p. 490).

James follows traditional epistemological practice when he structures consciousness. The terms that describe the dynamics of the stream of consciousness can be used to describe events in the external world, so that the structure of consciousness reflects the world it knows, as did the consciousness of the rationalists and empiricists. Spencer's evolutionary associationism served as a kind

of model for James because it united physiological and biological data with the laws of association to show how the mind evolved into a structure which met the requirements of the nineteenth century mechanistic world-view. Spencer was an evolutionist first and a psychologist second so that his concept of mind is largely subservient to his biology. In James' case, the psychology precedes the final elaboration of the characteristics of the external world, and the final dimensions of the external world were developed out of his conception of consciousness. But the basic concepts of what the external world is like are present in his psychology, and these conceptions were sufficiently developed to allow him to construct a consciousness capable of 'knowing' the world. As Brennan explains, the stream of consciousness serves as an analogue to radical empiricism where experience consists of interconnected fluid experiences (see Brennan, 1968, p. 42). The characteristics of the stream of consciousness were eventually expanded into a full-fledged philosophy of experience in the later radical empiricism. And because the structures of the stream of consciousness were so important in James' over-all philosophy, they will be discussed individually below.

Commentators and Critics of James' Stream of Consciousness

James' commentators and critics recognize the strong influence of evolutionary theory on his work (see Perry, 1935/1974, 1, pp. 468-469, 482-490; Wiener, 1965, pp. 95-128; Kuklick, 1977, pp. 160-162; Reck, 1967, pp. 23-24; Royce, 1911/1969, pp. 10-14; Knox, 1914, pp. 8-15; Roth, 1969, pp. 25-26; and Murphy & Murphy, 1969, pp. 260-262), but most of these writers do not analyze the characteristics of the stream of consciousness in terms of James' positive motives for reconstructing consciousness. Instead, they use the teleological

theory of interests to describe James' view of consciousness as efficacious and to describe his quarrel with Spencer (see above, Chap. 2, pp. 130-131). The stream of consciousness is then analyzed rightly enough, in terms of James' reaction against the elementarism of associationism on the one hand, and his refusal to accept the transcendental ego of Kant on the other (see for example, Wild, 1969, pp. 55-56; Dooley, 1974, p. 31; Perry, 1935/1974, 2, pp. 77, 83; Kuklick, 1977, p. 178; Boring, 1950, p. 512; Watson, 1978, pp. 380-381; Reck, 1967, p. 28). Knox (1914, pp. 22-24) and Murphy and Murphy (1969, pp. 261-262) are exceptions in that they acknowledge the evolutionary character of the stream of consciousness. Unfortunately, neither of them goes into any detail about the relationship between the stream of consciousness and evolutionary theory. Even Wiener, who is concerned with the evolutionary characteristics of James' psychology and philosophy limits his remarks on the stream of consciousness to a brief summary of Baldwin's review of James' theory (see Wiener, 1965, p. 107). Perry regards the stream of consciousness as a novel creation on James' part; the similarities between it and the older psychology are too minimal in Perry's view to account for James' structure (see Perry, 1935/1974, 2, p. 78), and he makes no reference to any of the other conditions which influenced James' construction.

While most of the literature on the stream of consciousness is cogent and to the point, some of it tends to be merely descriptive so that James' achievement is simply documented historically (see Watson, 1978, pp. 380-383; Reck, 1967, pp. 29-30), and no particular theoretical conclusions are drawn. Still other writers are inclined to dismiss the stream of consciousness as a "magnificent failure" (Kantor, 1942, p. 147), or to dwell on its negative implications for

the psychology that came after (see Boring, 1950, p. 514).

The substantive debate in the literature is rightly concerned with how 'successful' James' construction of consciousness is, in terms of the 'subjective' and 'objective' qualities of thoughts as objects as they appear in the stream of consciousness. Wilshire relates James' psychology to phenomenology and argues that the strong subject-object dualism that characterizes the structure of the stream of consciousness means that James does not describe thought but only the thought's object (see Wilshire, 1968, pp. 68. 80). Wilshire points to a major problem in comprehending James' theory when he states that he is unsure as to whether the thought's object belongs to the mental side or the physical side of the experience (see Wilshire, 1968, p. 95) so that analysis of the percept can be confused with the analysis of the 'real' object (see Wilshire, 1968, p. 106).[7] Wilshire concludes, after a long analysis, that James' self-professed dualism collapses because James cannot keep the world out of the thought or the thought out of the world so that the way is open for phenomenology (see Wilshire, 1968, p. 118).

Wild also finds difficulties with the subject-object dualism of the stream of consciousness but concludes that the intentionality of the stream validates the concept (see Wild, 1969, p. 58). He points out that the repeated experience of an object does not mean that the same state of consciousness is present and adds that the British empiricists made the mistake of equating objects and mental states, thus neglecting the intentionality of mental states (see Wild, 1969, p. 50). James, he feels corrects the empiricist error

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7. This problem is discussed in more detail below. See pp. 175-180.

by making the stream of consciousness 'sensibly continuous' so that transitional and relational states as well as permanent 'resting places' occur without any break in the stream. Wild theorizes that this concept is 'intentional' in the phenomenological sense--that is, the stream of consciousness is primarily intentional (see Wild, 1969, p. 61). Thus, both Wilshire and Wild conclude that the concept of the stream of thought is ultimately compatible with phenomenological logic.

Both Wild and Wilshire are concerned with an internal analysis of James' Principles in terms of its effect upon the emergence of phenomenology, particularly Husserl's. Both are philosophers and are less concerned with the biological (or evolutionary) demands and implications of the structure of consciousness than James himself was, or than Dewey was.

Dewey criticized James' structure of consciousness in his 1940 paper, "The vanishing subject in the psychology of William James". Dewey, like Wild and Wilshire, is troubled by the 'two strains of dualism' he discerns in James' conception of the subject-object relationship (see Dewey, 1940, p. 589). Dewey is more concerned, however, to show that James' theory has implications for Behaviourism from the point of view of relating feelings or thoughts to the biological basis of consciousness. Dewey stresses that if James had followed the 'naturalistic' strain in his analysis (which conflicts with the epistemological dualism James imposed upon psychology; see James, 1890, 1, pp. 218-220 for James' statement), his psychology "would have resulted in a biological behavioristic account of psychological phenomena" (Dewey, 1940, p. 591).

What Wilshire, Wild, and Dewey have in common is a tendency to draw a limited set of assumptions out of James' work while showing

that other, conflicting assumptions can be negated. By this means, they hope to show correlations between James' work and their own theoretical positions. James' psychology has proven productive in building such 'modern' theories as phenomenology and behaviourism. By way of contrast the present analysis is concerned with presenting James' stream of consciousness in its historical context and with drawing out some of its broad implications for twentieth-century thought. Because the literature on the stream of consciousness largely neglects its evolutionary genesis, the present analysis will concentrate on the evolutionary aspects of James' theory, in order to eventually bring the structure of the stream of consciousness into line with James' evolutionary epistemology, pragmatism, and his evolutionary metaphysic, radical empiricism.

The Stream of Consciousness is Personal

The stream of consciousness is personal--every thought is part of a personal consciousness and no thought may belong to more than one personal consciousness. James is 'marking off' the limits of the personality with this proviso because he regards the stream of consciousness as the personality of the individual: "There are no marks of personality to be gathered aliunde, and then found lacking in the train of thought" (James, 1890, 1, p. 227). Only those feelings, thoughts, emotions, and 'fringes of thought' that can be found in the stream of thought constitute the personality--actually James claims that if there were such a thing as a non-personal thought, no one could know about it (see James, 1890, 1, p. 226). Every thought belongs to a particular individual so that the 'personal' factor of the stream of thought describes a closed system and "My thought belongs with my other thoughts, and your thought belongs with your other

thoughts" (James, 1890, 1, p. 226). James makes no distinction between the experience of the thought and the content of the thought so that, as Dooley reminds us, the thinker is the particular thought (see Dooley, 1974, pp. 30, 35). This gives James the beginnings of a methodology for the study of personality: "On these terms the personal self rather than the thought might be treated as the immediate datum in psychology" (James, 1890, 1, p. 226). James limits the discussion of the personal nature of consciousness to remarks on the warmth or immediacy one's thoughts have for onself. He also uses the feeling that thoughts belong with the other thoughts which one has, to account for the continuity of consciousness in the introspective sense.

But the notion that thought is personal has broader implications that are expanded later in the Principles. The personal nature of thought means for James not only that we make the separation between ourselves and the rest of the universe (see James, 1890, 1, p. 289), but that each consciousness is unique. He is reacting against the tendency of the earlier empiricists to describe cognition in universal terms (see, for example, James Mill, 1869, 1, pp. 262-265).

Darwin emphasized the importance of individual differences as the means of 'new' material for natural selection, while noting that accidental variations occurred where the variation in structure was of no utility to the individual (see Darwin, 1859/1977, pp. 102-103). Galton was inspired by this concept and in 1869 began to look at the individual differences in mental characteristics (see Anastasi, 1967, p. 4). In his work on psychogenesis (see James, 1890, 2, pp. 617-688), James shows that there are accidental, as well as 'adaptive' tendencies in consciousness, so that personality is the combined result of the 'emergence' of the 'adaptive' and 'accidental'

characteristics (see James, 1890, 2, pp. 622-627), becoming cognitive in the worlds of experience. The formation of personality, and the 'co-existence' of many personal 'selves', which are held together in one personality is analyzed in James' chapter on "The consciousness of self" (see James, 1890, 1, pp. 291-401). Personal, in James' usage, has two correlated meanings: it means that each personality is unique, and it means that personality can be defined as the sense of the 'belongingness' of one's thoughts and the 'felt' relations between the thoughts. That James was using the term 'personal' in this double sense is implied in his statement that:

> The universal conscious fact is not 'feelings and thoughts exist', but 'I think' and 'I feel'. No psychology, at any rate, can question the existence of personal selves. The worst a psychology can do is so to interpret the nature of these selves as to rob them of their worth (James, 1890, 1, p. 226).

Structuring thought as personal allows James to go on to postulate that thought is always changing: if all thoughts are personal, the thought process can be subject to change without disruption to the personality.

Thought is Always Changing

The concept that the stream of thought is always changing has obvious evolutionary overtones; it is also an explicit reaction against what James perceived as a gross error in the traditional empiricism. James writes that: "no state once gone can recur and be identical with what it was before" (James, 1890, 1, p. 230). He gives credit for this inspiration to Hodgson,[8] but develops the

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8. See James, 1890, 1, p. 230. James says that he took the idea for a changing consciousness from Hodgson's The philosophy of reflection, 1878, 1, pp. 248, 290.

concept into a major theme for his psychology and philosophy. According to Reck, "This theory of the constant flux of consciousness contrasts vividly with the atomistic psychology which builds consciousness up from static simple perceptions and ideas" (Reck, 1967, p. 29). Wild enlarges on this, commenting that James' concept is rooted in the intentional nature of experience while the British empiricists neglected this aspect of consciousness and thus postulated that recurring objects meant recurring mental states (see Wild, 1969, p. 59). James' description of the stream of consciousness as continually changing can therefore be seen as a reaction to British empiricism, particularly as James specifically takes Locke and his successors to task for their argument that the same idea could be experienced again (see James, 1890, 1, pp. 230-231).

James claims instead that the object of the thought is re-experienced, not the thought itself. Because our thoughts have the same objects, we believe that we experience the same physical objects again and again; we do not doubt the independent existence of the physical world (see James, 1890, 1, p. 231). And because these 'realities' reappear in consciousness, we believe that our ideas of them are the same (see James, 1890, 1, p. 231). But, says James, this is not the case: realities do not reappear to us in an unchanging fashion; we think they do because we have the "habit of not attending to sensations as subjective facts, but of simply using them as stepping-stones to pass over to the recognition of the realities whose presence they reveal" (James, 1890, 1, p. 231). How flexible or mutable the external or ideal worlds really are is not discussed at this point. Instead, James paints a picture of a world which contains the same objects, but 'presents' them in diverse perspectives to our consciousness (see James, 1890, 1, pp. 231-233).

Objects change 'phenomenally' but retain their identity, and it is this 'identity' that consciousness seeks and finds. Introspection allows us to recognize changes in the appearance of objects but the real means by which we can conclude that our feelings about objects change is in the affectional nature of the feelings themselves. Thus, we recognize the object, but "What was bright and exciting becomes weary, flat, and unprofitable. The bird's song is tedious, the breeze is mournful, the sky is sad" (James, 1890, 1, p. 232; see also Wild, 1969, p. 60).

James adds that getting the same sensation twice is a physiological impossibility because the brain is modified upon first receiving the sensation and the second presentation is influenced by this modification (see James, 1890, 1, pp. 232-235; see also Wild, 1969, p. 60). Introspective and physiological analysis leads James to conclude that thoughts are constantly changing, because of the nature of the biological apparatus, the phenomenal appearances of reality, and the 'subjective' states of consciousness.

James was beginning to find it impossible to believe that "under the dissolving-view-appearance of the mind elementary facts of <u>any</u> sort remained unchanged under the flow" (James, 1890, 1, p. 230). He took exception to the empiricist belief that the possibilities of sensation were permanent, while sensations themselves were fugitive and transitory. In Mill's system, the possibilities of sensation <u>are</u> the stable part of the world, and all knowledge is generated by their appearance and reappearance. Any phenomenal differences between the appearances are not mentioned by Mill. Nor are any subjective differences in consciousness:

> I see a piece of white paper on the table. I go into another room. If the phenomena always followed me, or if, when it did not follow me, I believed it to disappear

> e rerum natura, I should not believe it to be an external object. I should consider it as a phantom --a mere affection of my senses: I should not believe that there had been any Body there. But, though I have ceased to see it, I am persuaded that the paper is still there. I no longer have the sensations which it gave me; but I believe that when I again place myself in the circumstances in which I had those sensations, ... I shall again have them; ...These various possibilities are the important thing to me in the world. My present sensations are generally of little importance, and moreover are fugitive: the possibilities, on the contrary, are permanent, which is the character that mainly distinguishes our idea of Substance or Matter from our notion of sensation (J.S. Mill, 1872, pp. 228-229).

For James, the phenomenal differences in the presentation of the object from one time to the next were to become of increasing importance particularly in his radical empiricism. In the present context, however, he is reacting against the empiricists' failure to take into account the subjective meaning of the sensation. Mill, in the passage given above, is solely concerned with being able to relocate his piece of paper. Or, as James writes, the empiricists:

> Only spoke of their states as ideas of this or of that thing. What wonder, then, that the thought is most easily conceived under the law of the thing whose name it bears! If the thing is composed of parts, then we suppose that the thought of the thing must be composed of the thoughts of the parts. If one part of the thing have appeared in the same thing or in other things on former occasions, why then we must be having even now the very same 'idea' of that part which was there on those occasions. If the thing is simple, its thought is simple. If it is multitudinous, it must require a multitude of thoughts to think it. If a succession, only a succession of thoughts can know it. If permanent, its thought is permanent. And so on ad libitum. What after all is so natural as to assume that one object, called by one name, should be known by one affection of the mind?(James, 1890, 1, p. 236)

The subjective meaning of the object was fundamental; this is where evolution comes into James' structure of consciousness. The 'subjective' appraisal of the object--that is, the fringes which accompany it--completes the 'meaning' it has for the thinker. In fact (as will be shown below), the subjective aspects of the thought process determine which aspects, or properties of the object will be

thought about. Mill's piece of paper, for James, becomes more than a simple relocatable object in the world; it becomes an object with definable and 'selectable' relationships to the world and to the observer who seeks it. The empiricists were unconcerned with meaningful relations in this sense. They sought a stable correspondence between 'ideas' in the mind and the 'objective' qualities of the external world and this is the essence of passive sensationalism. Even conceptions "do not develop themselves from within, but are impressed upon the mind from without" (J.S. Mill, 1843/1974, 8, IV, ii, 2, p. 653).

James looked to the subjective differences in mental states to provide the 'information' required for adjustment in the world. It mattered to James that feelings could not be precisely reexperienced and he took care to show that there was no hard and fast evidence to support the position that they could be (see James, 1890, 1, pp. 233-236). James is concretizing the concept of mutability into consciousness as the foundation of individual adjustment, development and growth. Knowledge is not simply cumulative; its development is marked by qualitative changes. 'New' or changing feelings not only mean a more efficient adjustment of internal needs to external pressures, but the chance for novel ideas and new actions to emerge.

Thought is Sensibly Continuous

The notion that thought is sensibly continuous is perhaps the most complex and evanescent of the characteristics of consciousness. But it is also the most 'productive' and 'radical' notion from a philosophical standpoint for it contains the germs of James' radical empiricism. James' insistence that thought is sensibly continuous can be seen as part of his reaction against British empiricism [9]

but it is far more than that. James' conception of the relations which give the stream its continuity, is, in fact, a major creative achievement. As Perry writes:

> The most signal "omission of introspective psychology", as James saw it, was the relational or transitive state, which when adequately recognized, gives to consciousness an aspect of streamlike continuity. Except possibly for the dependence of knowledge on will, this was James's most important insight (Perry, 1935/1974, 2, pp. 76-77).

James begins his account fairly simply with an introspective description of the "temporal continuity of conscious life, which often seems interrupted by discontinuities and gaps of various kinds" (Wild, 1969, p. 62). He is convinced that consciousness is "without break, crack, or division. ...The only breaches that can well be conceived to occur within the limits of a single mind would be either interruptions, or time-gaps...or they would be breaks in the quality, or content of the thought" (James, 1890, 1, p. 237). He distinguishes between interruptions caused by 'abnormal' and 'unfelt' states such as the administration of anaesthetics (see James, 1890, 1, p. 237), and 'normal', 'felt' interruptions such as sleep (see James, 1890, 1, p. 238). James concludes that in the first case, there is no consciousness at all; upon awakening, consciousness simply merges over the 'blind-spot' so that the gap itself is unexperienced, while in the second case (sleep), consciousness 'reaches' back and makes connection with itself (see James, 1890, 1, p. 238). Because consciousness has this continuous, reconnective function, James declares that it should be designated as "the stream of thought, of consciousness, or of subjective life" (James, 1890, 1, p. 239).

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9. See James, 1890, 1, pp. 244-245; Perry, 1935/1974, 2, p. 76. Wild points out that the empiricists have tended to follow Hume's decree that "experience is made up of isolated units succeeding one another" (Wild, 1969, p. 61).

But now matters become more complex, for James must give a more exact, and less introspective account of the continuous nature of consciousness (see James, 1890, 1, p. 239). To this end, he claims that it is the things themselves--that is, those objects, events, and relations that comprise reality and are therefore thought about--which are discontinuous (see James, 1890, 1, p.240), while the stream itself is continuous:

> The transition between the thought of one object and the thought of another is no more a break in the thought than a joint in a bamboo is a break in the wood. It is a part of the consciousness as much as the joint is a part of the bamboo (James, 1890, 1, p. 240).

The continuity of consciousness is produced by the 'felt relations' between thoughts (see James, 1890, 1, p. 243; and Wild, 1969, p. 63). The "feelings of relation are found not only in the lived existence, which we know directly by acquaintance. They are also found in our conceptual knowledge about" (Wild, 1969, p. 63; see also James, 1890, 1, pp. 242-243, 251-258). James therefore divides the stream of consciousness into 'objects' of thought and 'transitive' states so that consciousness alternates between 'resting places' where an image is held before the 'mind', and 'transitive' states "which are filled with thoughts of relations, static or dynamic, that for the most part obtain between matters contemplated in the periods of comparative rest" (James, 1890, 1, p. 243).

James is convinced that if feelings are real, the relations between them must be as real (see James, 1890, 1, p. 245), and uses language as the means of 'verifying' his point:

> There is not a conjunction or preposition, and hardly an adverbial phrase, syntactic form, or inflection of voice, in human speech, that does not express some shading or other relation which we at some moment feel to exist between the larger objects of our thought. If we speak objectively, it is the real relations that appear revealed; if we speak subjectively, it is the stream of consciousness that matches

> each of them by an inward coloring of its own. In either case the relations are numberless, and no existing language is capable of doing justice to all their shades (James, 1890, 1, p. 245).

More importantly, he draws a parallel between relations in the external world and relations in consciousness so that: "If there be such a thing as feelings at all, then so surely as relations between objects exist in rerum natura, so surely, and more surely, do feelings exist to which these relations are known" (James, 1890, 1, p. 245). The conception of the relations which 'bind' the natural world together was not worked out systematically until James began serious work on his radical empiricism. In the Principles, James has carried his thinking to the point of a surety that there are real relations between objects and events in the physical world, but he does not elaborate on these: the sureness that relations were real was sufficient for the development of his psychological structure. Later (see Chap. 8), the structure of the natural world was modelled on the broad concept of the stream of thought. Thus the notion that consciousness is a continuous flow of objects and relations is of profound significance, because it serves as the unifying concept of structure between consciousness and the external world.

Given that objects and relations exist in both consciousness and the external world, the structural relationships between them must be analyzed. James' aim was to show that thoughts or feelings were irreducible wholes; therefore it must be determined whether or not this concept is reconcilable with the hypothesis that thoughts are consubstantial 'amalgams' of objects and relations. The continuity of the stream of consciousness depends upon the satisfactory resolution of the problem as to whether or not thoughts are reducible into two distinguishable categories of 'events'. If the object of the

thought is an isolatable unit of the thought, then the holistic, irreducible nature of the thought itself, and the continuity of the stream of thought would be imperiled. James uses the term 'fringe' to describe the 'felt relations' of the thought's object and Wild says that "Every such object is set in a world-field, or in James' language, surrounded by a halo of fringes which gives it an original place and meaning in the world" (Wild, 1969, p. 63). The problem is to decide whether or not James' account of the fringes of conciousness shows them to be indistinguishably merged with 'objects' of thought, so that the distinction between objects and fringes would exist solely at the theoretical level of discourse, or whether consciousness must be analyzed in terms of two qualitatively distinct sets of events. In one of his most famous passages, James says that the 'free waters' of consciousness, which are equated with the fringe, are inextricably mingled with the objects of thought so that no real separation between them can be made:

> The traditional psychology talks like one who should say a river consists of nothing but pailsful, spoonsful, quart-potsful, barrelsful, and other moulded forms of water. Even were the pails and pots all actually standing in the stream, still between them the free water would continue to flow. It is just this free water of consciousness that psychologists resolutely overlook. Every definite image in the mind is steeped and dyed in the free water that flows around it. With it goes the sense of its relations, near and remote, the dying echo of whence it came to us, the dawning sense of whither it is to lead. The significance, the value, of the image is all in this halo or penumbra, that surround and escorts it,--or rather that is fused into one with it and has become bone of its bone and flesh of its flesh; leaving it, it is true, an image of the same thing it was before, but making it an image of that thing newly taken and freshly understood (James, 1890, 1, p. 255).

Given James' conviction that the object and its relations are inextricably fused together, and given James' contention that if objects are knowable, relations are similarly knowable, Wild is inclined to accept that there is no 'gap' or 'real' distinction between the

object and the fringe: "The thing cannot be separated from its meaning. It is what it means" (Wild, 1969, p. 64).

Wilshire agrees with Wild, noting that James "equates the fringe with the meaning of the sentence, and the meaning with the object" (Wilshire, 1968, p. 87). But he also points out that James' original description of how thoughts must be studied "with every word fringed, and with the whole sentence bathed in that original halo of obscure relations, which, like an horizon, then spread about its meaning" (James, 1890, 1, pp. 275-276), is misleading. For, Wilshire says, "the fringe can neither be, nor not be, spread about the sentence's meaning, because the fringe is the meaning (in the primal sense of "meaning", that is Object)" (Wilshire, 1968, p. 87). Wilshire (see Wilshire, 1968, p. 87) goes on to say that James ensures that this criticism cannot be levelled at him when he writes:

> Now I believe that in all cases where the words are understood, the total idea may be and usually is present not only before and after the phrase has been spoken, but also whilst each separate word is uttered. It is the overtone, halo, or fringe of the word, as spoken in that sentence. It is never absent; no word in an understood sentence comes to consciousness as a mere noise. We feel its meaning as it passes; and though our object differs from one moment to another as to its verbal kernel or nucleus, yet it is similar throughout the entire segment of the stream. The same object is known everywhere, now from the point of view, if we may so call it, of this word, now from the point of view of that. And in our feeling of each word there chimes an echo or foretaste of every other (James, 1890, 1, p. 281).

But Wilshire raises provocative questions in regard to a possible distinction between the object and the fringe. Wilshire is concerned with the subject-object dualism that arises in comparing the object as it exists in the external world with the mental object as it is 'felt', and both with the psychologist's object. The three are assuredly not identical for they all come 'fringed' in a different set of relations. As Wilshire points out, we must be wary of the

sense in which James uses the term 'object' at each stage of his analysis: the object of thought studied by the psychologist, the object as it exists in the external world, and the object of the thought itself 'encircle' one another (see Wilshire, 1968, pp. 86, 92). We have already seen that James insists that objects, not ideas, are associated, and that the same object is gotten over and over again while the 'subjective' meaning of thought changes continually. Furthermore, we have seen that when James discusses thought as Object, he insists that the object of the thought is the totality of the thought; by definition, the object is the thought (see James, 1890, 1, p. 276, quoted above, p. 136).

The problem is to determine how James' definition of what a thought is can be reconciled with the distinction James makes between the fringe of the thought and its object, or 'kernel'. If the fringe consists of the felt relations of the topic, and if the thought is one single felt pulse, then, as Wilshire writes, it is possible that because the fringe is the changeable aspect of the thought, a new fringe appears each time new implications of the thought emerge to replace the old ones (see Wilshire, 1968, p. 97). The other alternative, which preserves the internal unity of the thought, is to allow the object to move along with the fringe. But this would initially seem to contradict James' intention of building a realist epistemology where 'real' objects were cognized, and where concepts--stable and static[10]--provide the permanent possibilities for the fluctuating internal and external worlds.

The first alternative, although it preserves the unity of the

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10. James likens concepts to the Platonic forms (see James, 1890, 1, p. 462; see also Wilshire, 1968, p. 89).

thought as a single pulse has dangerous implications for James' psychology. James was specifically reacting against the notion of an atomistic psychology. If the fringe changes qualitatively so that 'new' distinguishable fringes are formed to maintain the unity of the thought while preserving the integrity of the objective kernel of the thought, James would come perilously close to constructing a series of isolated and therefore elementaristic units of thought (see Wilshire, 1968, pp. 98-99). As Wilshire says, the movement of the 'fringe' "is the heart of the creative process and in its all-important initial stages it is the flickering first flash of insight which only vaguely prefigures a topic" (Wilshire, 1968, p. 99).

The second alternative--that the object moves, is perhaps more in keeping with James' intentions: if we examine James' concept more closely, some of the difficulties related to the 'continuous' aspects of the stream of thought may lend themselves to a satisfactory resolution. James emphasizes the movement of thoughts through time: "It takes time to utter the phrase" (James, 1890, 1, p. 279). Thus, upon introspection the thought may be broken into 'permanent' kernels and 'transitory' fringes but the <u>experience</u> of the thought does not include the distinction, nor does the experience of the following thoughts which perform the breakdown operations. The total object of the thought <u>includes</u> the fringes as well as the 'objective' or 'substantive' portions of the feeling and (see James, 1890, 1, p. 281), the kernel of the thought or feeling is experienced throughout the thought even though the words that correspond to that kernel (to use a verbal example for simplicity's sake) are not continuously 'felt' in consciousness with equal intensity, but give way to other portions of the sentence. This means that the kernel of the thought moves through time even though we do not feel or

register its passing:

> Of course the thought has time-parts. The 2-3 of it, though continuous with 1-2, is yet a different part from 1-2. Now I say of these time-parts that we cannot take any one of them so short that it will not after some fashion or other be a thought of the whole object 'the pack of cards is on the table'. They melt into each other like dissolving views, and no two of them feel the object just alike, but each feels the total object in a unitary undivided way (James, 1890, 1, p. 279).

The meaning of the thought is the thought, passing through time in its totality, so that the words of a sentence cannot be isolated as distinctive entities:

> And in our feeling of each word there chimes an echo or foretaste of every other. The consciousness of the 'Idea' and that of the words are thus consubstantial. They are made of the same 'mind-stuff', and form an unbroken stream (James, 1890, 1, p. 282).

The meaning of the thought cannot be reduced into elements because each part of the thought is suffused with the meaning of the whole thought--the meaning consists precisely in the kernels, or objects, and the fringes, as they come together. Each thought is an inseparable unity, passing through consciousness over a period of time, and each word of the thought is coloured by the rest of the thought so that:

> Each word, in such a sentence, is felt, not only as a word, but as having a meaning. The 'meaning' of a word taken thus dynamically in a sentence may be quite different from its meaning when taken statically or without context. The dynamic meaning is usually reduced to the bare fringe we have described, of felt suitability or unfitness to the context and conclusion (James, 1890, 1, p. 265).

Words, or kernels, or objects, then, cannot be considered to exist as replicas of the external world in the stream of thought. They are, taken dynamically, part of the moving 'meaning' of the passing thought. Thus, whatever relationship the object of the thought bears to the external or real object, it is not a simple replication of it, as James takes care to demonstrate. As Wilshire writes:

> James wishes to maintain that no two sensorial images are ever twice the same. Although he fails to demonstrate this sweeping assertion, still he shows convincingly that there are differences we might not have suspected. In one sense of "looks" the grass in the shade does look different from that in the sun. But it all means the same to us observers--uniformly green grass--because the same cognitive or signifying function is involved; in other words, the imagery has the same fringe; what we mean as to the being of the thing remains constant. It is the same green lawn all over (Wilshire, 1968, p. 113; see also James, 1890, 1, p. 231).

Of course, different thoughts about the lawn would 'reveal' the contrasts in colour--this would merely involve a different cognitive function for the thought, so that a different fringe would be cojoined with the object in consciousness. And it is then logical to assume that this fringe could interact with other objective images as well--for example, the constancy or lack thereof of the white colour of the house that is surrounded by the lawn. This does not need to imply that fringes are static or felt in exactly the same way each time they are re-experienced any more than objects are. If we never get a sensorial image in precisely the same way twice, it is logical that we never get the same fringe exactly repeating itself.

Both fringes and objects would appear to be 'permanent' in one sense, and 'transitory' in another, and the consubstantial nature of object and fringe produces thoughts which are 'transitory' and yet 'permanent'. As Wilshire says, "James maintains that there is no definite limit to the kinds of imagery which can be fringed in the same way" (Wilshire, 1968, p. 113; see also James, 1890, 1, pp. 260-261). It would seem safe to conclude that James manages to maintain the 'unity' of the thought as an irreducible whole in mental experience; at the same time, the internal constitution of the thoughts does not appear to damage his conception of the stream

of consciousness as sensibly continuous. Both fringes and objects are potentially, if not really, permanent constructions. Both are combined so that they are experientially irreducible although 'previous' thoughts may be reduced into components by the thoughts that follow, while these thoughts themselves are experienced holistically. Both fringes and objects are felt over time; the fact that there is no sensible awareness of time passing does not invalidate James' construction, for awareness of time passing would add a new fringe to the thought; that is, it would be a new thought. Neither the fringes nor the objects of thought can be reduced to atomistic units. Fringes in the end, simply accompany feelings insofar as they have a structure. And the objective content of the thought cannot be isolated as a particle in the flow, nor can it be seen as a duplicate of an external object. This is because James sets up a definition wherein the object and its relations are ultimately irreducible; the characteristics of the object depend upon the relations; primary and secondary qualities are inseparable at the experiential and psychological levels.

This means that James has implicitly ratified the subject-object mind-matter distinction that he formally based his psychology on and that he is now in fact faced with the problem of how the world can be known at all since thoughts obviously do not 'copy' the characteristics of physical objects. If the 'experienced' stream of consciousness is not imperiled by an internal subject-object dualism, the problem of what the stream 'knows' about the world necessarily arises. But before turning to James' notion that the stream of consciousness is cognitive, it is necessary to look at the evolutionary implications of a continuous consciousness.

Although the parallel may appear somewhat insubstantial, and

although it cannot be substantiated by direct appeal to James' writings, there does seem to be a parallel between Darwin's description of the interactions of life forms in the natural world and James' denotation of the stream of thought as sensibly continuous. While James attacked the empiricists for their view of consciousness as composed of elementaristic, isolated ideas, and their dismissal of relations (see James, 1890, 1, pp. 244-245), Darwin attacked the doctrine of special creation (see Darwin, 1859/1977, pp. 445-446), and stressed the interaction between the organism and its environment, and the changing conditions of the organism and the environment:

> Why, if man can by patience select variations most useful to himself, should nature fail in selecting variations useful, under changing conditions of life, to her living products? What limit can be put to this power, acting during long ages and rigidly scrutinising the whole constitution, structure and habits of each creature,--favouring the good and rejecting the bad? I can see no limit to this power, in slowly and beautifully adapting each form to the most complex relations of life (Darwin, 1859/1977, p. 443).

If relations were neglected by the empiricists (see Perry, 1935/1974, 2, pp. 76-77), Darwin has certainly made them a fundamental part of his world. Moreover, changes in species are relative; organisms adapt and develop in relation to one another:

> As natural selection acts by competition, it adapts the inhabitants of each country only in relation to the degree of perfection of their associates; so that we need feel no surprise at the inhabitants of any one country, although on the ordinary view supposed to have been specially created and adapted for that country, being beaten and supplanted by the naturalised productions from another land (Darwin, 1859/1977, p. 445).

At the same time, Darwin was intent on preserving the uniformity of nature (see Young, 1971, p. 500), so that change was dependent upon the interaction of the species and their environment. But he intended to preserve that uniformity by describing the lawful pro-

cess wherein change took place in a continuous and unbroken progression:

> All the individuals of the same species, and all the species of the same genus, or even higher group, must have descended from common parents; and therefore, in however distant and isolated parts of the world they are now found, they must in the course of successive generations have passed from some one part to the others. ...A broken or interrupted range may often be accounted for by the extinction of the species in the intermediate range (Darwin, 1859/1977, p. 437).

It is a long way from Darwin's use of relations and the notion that species are 'continuous' to James' conception of consciousness as sensibly continuous, with the fringes providing the relational character of thought. Nevertheless, some relation may obtain between the two conceptions; at least it can be inferred that James' construction has a Darwinian flavour. Moreover, the accomplishments of the two men are similar: the notion that the stream of consciousness is sensibly continuous acts, in James' epistemology, as a replacement structure for the laws of association which held consciousness together in the older paradigm. It fulfils the purpose of ensuring the uniformity of consciousness in a way that is similar to Darwin's substitution of a relational and developmental schema to ensure the uniformity of nature, when he discarded the doctrine of special creation.

The evolutionary significance of the sensibly continuous nature of consciousness is that it allows the same object to be perceived and interpreted differently on diverse occasions by the same individual. The same fringe does not accompany the object each time it appears in consciousness so that adaptation becomes a plastic process from the point of view of psychology. The sensibly continuous structure of consciousness ensures that the object will be 'recognized'--it is the same lawn I saw yesterday--but the meaning of the

object is not completely given in the object itself (see James, 1890, 1, p. 232). Consciousness in this sense is fundamentally efficacious because the meaning of the thought is not strictly determined according to the laws of association, and the meaning of the thought has direct consequences for activity, as will be shown below (see Chaps. 5 and 6).

Thought is Cognitive

The 'internal unity' of a thought has been demonstrated to depend on the subject-object distinction being realized in James' psychology: it is therefore imperative for James to make it explicit that thought is cognitive, that "It always appears to deal with objects independent of itself"(James, 1890, 1, p. 225). In the description of the cognitive characteristics of thought in the chapter called "The stream of thought" (see James, 1890, 1, pp. 271-283), James limits himself to the introspective or psychological evidence for the assumption that thought is cognitive.[11] James begins by stating that:

> The reason why we all believe that the objects of our thoughts have a duplicate existence outside, is that there are many human thoughts, each with the same objects, as we cannot help supposing. The judgment that my thought has the same object as his thought is what makes the psychologist call my thought cognitive of an outer reality (James, 1890, 1, pp. 271-272).

The commonality of the objects of thoughts between individuals provides, in James' mind, substantial evidence that thought is

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11. Later, in the Principles, James goes on to broader arguments of how thoughts know the world, and describes how we know that our thoughts are true or false at various levels of reality. That thoughts are cognitive of real objects, relations, and events in the external world is the fundamental premise of James' psychology and philosophy; his pragmatism is based on this hypothesis and provides a methodology for ascertaining the truth or falsity of our thoughts about the world.

cognitive. At the very least, we can say that we know the same objects, and while this does not prove that objects exist, correlative to thoughts about them, it serves as the beginning of a realist account for James.

James' second argument is that objects reappear in thought; this reappearance "is what makes me take the object out of either and project it by a kind of triangulation into an independent position" (James, 1890, 1, p. 272). The belief that there are real existents external to oneself is quickly developed through experience with the world. We come to believe in the objective realities of the world surrounding us; we do not doubt that a real world exists external to ourselves and at the same time we believe that we 'know' or can know that world directly: "This...is the psychological point of view of all natural science, beyond which this book cannot go" (James, 1890, 1, p. 272). Thus the mind 'knows' the world, and it also 'knows' that it is cognitive (see James, 1890, 1, p. 273); at this point according to James, the psychologist is free to study the cognitive experiences of consciousness without making any further inferences about the objects that are known, and in fact, must make no further inferences (see James, 1890, 1, p. 274).

James now discusses the meaning of the object as it is known in consciousness, and concludes that the object of the thought is the entire thought--nothing more and nothing less:

> Thus if anyone ask what is the mind's object when you say 'Columbus discovered America in 1492', most people will reply 'Columbus', or 'America', or, at most, 'the discovery of America'. They will name a substantive kernel or nucleus of the consciousness, and say the thought is 'about' that, --as indeed it is,--and they will call that your thought's 'object'. Really that is usually only the grammatical object, or more likely the grammatical subject, of your sentence. It is at most your 'fractional object'; or you may call it the topic' of your thought, or the 'subject of your discourse'. But the Object of your thought is

> really its entire content or deliverance, neither more nor less (James, 1890, 1, p. 275).

These ideas have been discussed above, but the importance of this statement as an epistemological position must not be neglected. We have already shown that the experienced thought is not an exact representation of the physical object that is thought about. James was concerned, as are all epistemologists, with the nature of the relationship of the thought to the external object. As a psychologist, he has to find some way of isolating the most primary, or immediate experience of reality. If the function of thought is to know the world, then one of the functions of the psychologist is to give a careful description of exactly how the thought knows the world, and what it knows about it. But Perry, analyzing the passage quoted immediately above, gives a problematic description of the meaning of the thought in this context:

> Over and above its present meaningfulness, consisting in the irradiation of the fringe within the circle of its horizon, there is also its meant, the non-present experience which is defined by the fringe's orientation. This ulterior and contingent experience consists, for example of Columbus' experience of America in 1492, or, perhaps, his alibi (Perry, 1958, p. 90).

Wilshire replies:

> This is an interpolation, it seems to me. James does not say that the "meant", in any sense of the word, could be Columbus' alibi. And this stands to reason. If we say that Columbus discovered America, then we mean that he discovered it (whether he actually did is irrelevant), and we precisely do not mean that he did not but had an alibi instead (Wilshire, 1968, p. 91; see James, 1890, 1, p. 275 for James' use of this example).

Whether or not Columbus actually discovered America may be very relevant depending on the connections of the thought, 'Columbus discovered America in 1492', and Perry (1958, p. 90), is quite right in pointing out that there is a distinction in James' writings between those thoughts that admit of direct, perceptual verification,

and those, like thoughts of Columbus, that can only be indirectly verified.[12] But Wilshire is right in criticizing Perry for allowing that our thought about Columbus could be, in James' usage, about Columbus' alibi. Our thought about Columbus' discovery can lead us to wonder whether or not it is true, or whether Columbus did in fact have an alibi, or it can come as the final conclusion of our researches about Columbus, and serve the function of bringing these to a satisfactory end--that is to say, we conclude that Columbus did in fact discover American in 1492. But the thought itself cannot mean two conflicting things at once. The meaning of the thought is the thought itself and nothing more nor less. This is important if James is going to be able to develop a realist epistemology. James makes the distinction between those perceptions, conceptions, beliefs, thoughts, ideas, or feelings that seem in themselves to be incontrovertibly true, and those which belong to scientific, metaphysical, or religious systems of reality according to their 'powers' to incite our belief (see James, 1890, 2, pp. 292-293). I may doubt the truth of the hypothesis that Zeus sits enthroned on Olympus--that is, I may say that this is true in the context of Greek mythology, but at the same time, I can say with assurance that if I go to Olympus and search for Zeus, I know beforehand that I am unlikely to find him (see James, 1890, 2, p. 292). Similarly, I cannot doubt that the paper upon which I type these words is a real concrete object, with an independent physical existence. My thoughts of the paper in front of me come fringed with a surety that it exists, and they do not come with the fringe that it may be an

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12. James takes up this issue in his pragmatism (see James, 1907/1913, pp. 213-217).

hallucination or an optical illusion. Without such expectations about the reality of the paper, I should, according to Wilshire,be unable to think about the paper in its present form at all (see Wilshire, 1968, p. 94); it would have to be relegated to another level of reality, and follow the rules for verification within that realm. But the psychological process is the same for all levels of reality as shall be shown below, so that in all cases, the idea means what is 'says' it means, and nothing else.

If thoughts are to admit of verification, direct or indirect, they must come with an implicit meaning of their own. What they may be developed into is only partially limited by the thought itself, so that I am perfectly at liberty to question whether or not my initial perception of the paper as an independent object was in fact correct. I may also think about the consequences that could accrue if my perception was false. But if my thought of Columbus can mean that he did discover America or that he had an alibi, then I am working with two conflicting meanings. My thought of seeing the paper in front of me--'I see a piece of white paper', does not imply that I perhaps see something else. It can, in fact, come to mean that I do, on further study of the issue, but the initial perception of the paper, or the initial thought about Columbus means exactly that, unless the 'fringe' carries a question about the 'truth' of the thought. Otherwise, the whole cognitive function of my thinking is disrupted, and the thought is only said to be cognitive after the fact of verification. And this, up to a point, is true, as we shall see when we go on to examine James' pragmatic methodology for determining the truth or falsity of any feeling or idea.

The point in the present context is that the meaning of the thought contains, as Wilshire says, "a reference to the future"

(Wilshire, 1968, p. 94). That is, it comes, or it is a meaning in reference to the future and therefore provides (as shall be shown below), its own fiat for action. Thoughts explicitly lead us to other thoughts or to specific actions, and the expectation of the particular consequences of the act is contained in the thought's meaning. Wilshire writes:

> If I think, for example that the teakettle is full, this involves as a present relation in the fringe the expectation that the teakettle will be heavy and not fly up in my face when I lift it. The teakettle is thought of as fringed; the fringe is not a wraith floating somehow in psychical space. One of the definite relations in the teakettle's fringe is its relation to my body in a given set of circumstances--a set which need not be presently realized in fact. Now, without expecting it to be realized, I cannot, according to James, think the thought at all. So there must be this initial satisfaction in the fringe if the thought is to be thinkable. The thought is already satisfied to this degree. If I go over and pick up the teakettle with the expected amount of effort and it does not fly up in my face, then the thought is satisfied in still a further degree. It is now verified--true (Wilshire, 1968, p. 94).

I cannot, then, think the thought 'the teakettle is full' and be said to mean that perhaps the teakettle is empty. I can wonder whether or not the kettle is full, but this is a different thought, and incites different actions in regard to the kettle than if my thought is that it is full.

From James' psychological point of view, the only means of stating that thoughts are cognitive is to contain the meaning of the thought within the thought itself. Thoughts are cognitive because they mean something specific about the world. They therefore do not have to be replications or 'copies' of objects, because their meanings are expectations about the nature of reality, and they can lead to verifications of their meanings which further satisfy the expectations of the individual who thinks the thought. This is why James chooses to discuss the nature of the thought as a complete and

meaningful object in itself in the section dealing with the cognitive function of thoughts (see James, 1890, 1, pp. 275-283).

What then, are the evolutionary implications? If thoughts have the function of knowing the world and instigating action in relation to their meanings, then they must know the world in such a way as to facilitate purposive actions. The individual must not only recognize the existence of other objects, events, or relations; he must also recognize the meaning they have for him so that thought in the cognitive sense is both objective and subjective at the same time. In making thoughts cognitive in this way, James makes them purposive. This is what Wilshire means (see Wilshire, 1968, p. 94), when he says that thoughts contain references to the future. In James' view the individual is not cognitive in a purely observant or passive sense: he 'knows' the world in ways which are compatible with his purposes.

Thought is Selective

James says of this final characteristic of the structure of consciousness that the thought "is always interested more in one part of its object than in another, and welcomes and rejects, or chooses, all the while it thinks" (James, 1890, 1, p. 284). This, perhaps, is the most important characteristic of the stream of thought from an evolutionary point of view, for it is the characteristic which fundamentally describes James' particular voluntarism. As Knox puts it: "conscious selection creates the known world in precisely the same sense in which 'natural selection' creates the species" (Knox, 1914, p. 23). The mind is essentially active; passive sensationalism is precluded in the very nature of the

perceptual and conceptual processes themselves, for James writes:

> To begin at the bottom, what are our very senses themselves but organs of selection? Out of the infinite chaos of movements, of which physics teaches us that the outer world consists, each sense-organ picks out those which fall within certain limits of velocity. To these it responds, but ignores the rest as completely as if they did not exist. It thus accentuates particular movements in a manner for which objectively there seems no valid ground; for, as Lange says, there is no reason whatever to think that the gap in Nature between the highest sound-waves and the lowest heat-waves is an abrupt break like that of our sensations; or that the difference between violet and ultraviolet rays has anything like the objective importance subjectively represented by that between light and darkness. Out of what is in itself an undistinguishable, swarming continuum, devoid of distinction or emphasis, our senses make for us, by attending to this motion and ignoring that, a world full of contrasts, of sharp accents, of abrupt changes, of picturesque light and shade (James, 1890, 1, pp. 284-285).

James allows that the physical structure of the organs of sensation determine what we are able to perceive about the world, but adds that out of the sensations thus yielded, attention then selects those which are "worthy of its notice and suppresses all the rest" (James, 1890, 1, p. 285).

James is at pains to emphasize just how important this selective process is in human terms; his contrast between those things which are cognized into meaningful objects and relations in comparison to those which are neglected, or never noticed is dramatic and to the point:

> Helmholz says that we notice only those sensations which are signs to us of things. But what are things? Nothing, as we shall abundantly see, but special groups of sensible qualities which happen practically or aesthetically to interest us, to which we therefore give substantive names, and which we exalt to this exclusive status of independence and dignity. But in itself, apart from my interest, a particular dust-wreath on a windy day is just as much an individual thing, and just as much or as little deserves an individual name, as my own body does (James, 1890, 1, p. 285).

Within the range of phenomena we are physiologically capable of perceiving we select those which are significant to us, and denote

them as things, ignoring the rest. And, after these 'gross' selections are made, James says that the mind selects again so that:

> It chooses certain of the sensations to represent the thing most truly, and considers the rest as its appearances, modified by the condition of the moment. Thus my table-top is named square, after but one of an infinite number of retinal sensations which it yields, the rest of them being sensations of two acute and two obtuse angles; but I call the latter perspective views, and the four right angles the true form of the table, and erect the attribute squareness into the table's essence, for aesthetic reasons of my own (James, 1890, 1, p. 285).

So what are the implications of such a position? James implies that a real world of objects and relations exists, external to ourselves, but the representation of that world in our consciousness is less than exact. That is, we do not get reality 'as it comes', but as we select it.[13] The world we 'get' is coloured by the very nature of the conscious process itself--this, James feels, is borne out by the difficulties in abstracting ourselves to the point where we are recipients of 'pure experience'--he claims that adults rarely get pure sensations (see James, 1890, 2, p.1).

James also decrees that the mind itself "is at every stage a theatre of simultaneous possibilities. Consciousness consists in the comparison of these with each other, the selection of some, and the suppression of the rest by the reinforcing and inhibiting agency of attention" (James, 1890, 1, p. 288). He gives a hierarchical account of consciousness here so that:

> The highest and most elaborated mental products are filtered from the data chosen by the faculty next beneath, out of the mass offered by the faculty below that, which mass in turn was sifted from a still larger amount of yet simpler material, and so on. The mind,

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13. That we are coerced into certain beliefs about the physical world as a result of the effects of its properties on ourselves will be demonstrated in Chap. 4.

> in short, works on the data it receives very much as a sculptor works on his block of stone(James, 1890, 1, p. 288).

The higher reasoning processes select from the data provided by the lower 'sensational' processes: in this way, the conceptual map is developed and the abstract systems of describing reality are created.

James also claims that "The human race as a whole largely agrees as to what it shall notice and name, and what not" (James, 1890, 1, p. 289). In this way, there is agreement on the nature of reality which otherwise would not exist. He states that the univeral exception to this commonality is the distinction each individual makes between himself and the universe, so that each individual has a set of unique interests which pertain to himself and to himself alone (see James, 1890, 1, p. 289).

James does not elaborate on the selective aspects of consciousness beyond these fairly broad statements. And this, in the end, is fair enough; the rest of the Principles concentrates on the problems of how the stream of consciousness knows the world, and how, from possibilities presented to it, the mind selects those which will be preserved as 'conceptions' of the world, those which will be acted on, and those which will be discarded.

In making consciousness selective, James creates the most obvious link beween psychology and evolutionary theory. If James can succeed in demonstrating that consciousness really is selective--and that its selections are meaningful--then he will have a viable voluntaristic epistemology based on evolutionary postulates. The problem will be to determine whether or not the selections consciousness makes are so dependent upon neurophysiological organization, the inbuilt structures of mind such as the instincts, and the

development of habit formations, that free selections are a psychological impossibility. The characteristics of the external world, as they appear in perception must also be taken into account, for the selections the mind makes must be at least in part determined by the coercive characteristics of objects. This is necessary for an evolutionary epistemology, as the mind must select and attend to those objects and relations which have consequences for the survival and adaptation of the individual.

This essentially concludes the discussion of the stream of consciousness as an evolutionary structure. We have seen that James presents a conception of consciousness that embodies those characteristics which we now take as the common assumptions of the evolutionary position. Consciousness changes but remains a continuous flow of thoughts and relations so that uniformity is preserved. It is selective, and selective across changing realities--internal and external--while it is a repository of permanent ideas or conceptions. Finally, it functions in terms of evolutionary demands, and it is structured so as to facilitate adaptation, adjustment, and knowledge in the external world. To this end, it is personal; it strives to fulfil the demands of the organism. Consciousness is held together by the felt relations in conjunction with the objects of thought, and in this sense, parallels Darwin's description of the organism and its relations to the environment.

The paramount problem remains in this analysis however, and this problem is concerned with the specifics of the mind's cognitive relationship to the physical world. We concluded that James was able to construct a consistent definition of thoughts as holistic entities, so that the subjective and objective aspects of the thought were irreducible on an experiential basis at least. This is, of course,

a theoretical definition of thought, and James is therefore free to construct the thought, and the corresponding sensible continuity of the stream of consciousness in this way. But we have shown that the unity of thought depends upon the ratification of the mind-matter, subject-object distinction which James formally based his psychology on because if thoughts are to be taken as irreducible wholes, then it is impossible for the individual to make an absolute distinction between those aspects of the thought which were generated by the perception of the object--that is, the coercive value of the object in determining the thought--and those aspects which are products of his own subjectivity--that is, his purposes or 'intentions' towards the object. We have also shown that the relation of the thought to the physical world finally depends upon active verification by the individual. All James can really say at this point is that thoughts appear to be cognitive because we <u>believe</u> that their objects have independent referents, that our actions in regard to these 'objects' yield supportive 'felt sensations', and that we seem to share a common world. From this psychological perspective, James' theory of consciousness is subjective. The problem of what the mind can really know about the world--what it does really know about the physical objects and their relations--is a problem that James is forced to tackle throughout the remainder of his psychology and philosophy, and his attempt to resolve it, while retaining the structural unity of consciousness, will occupy a large part of each succeeding chapter of this thesis.

James was trying to create an efficacious model of consciousness so that consciousness selected the objects that it 'knows' and subsequently propelled the individual into consciously determined, active relationships with the physical world. This aim could only

be met if the thought included the object cognized, and an 'intention' towards the object: thoughts about objects are not only thoughts affirming the existence of objects. Thoughts could only be considered efficacious if James provided some means of showing that the thought was a selected intention towards the object--that is, that the thought interpreted the object according to the needs or wishes of the observer. I can 'think' of the piece of paper as an object to write on, or to burn, and my thought of the object in each case will selectively concentrate on those aspects of the piece of paper that make it suitable for either treatment. That it is white is important when I wish to write on it--colour is irrelevant when I wish to burn it. And it is this selective intentionality towards the object that makes my thought efficacious. The problem thus comes in trying to decide, within James' theoretical framework, what the object really is, in itself, independent of the observer and his subjective interpretation of it. This comes to be a serious problem in trying to determine how the mind is influenced by the physical world, not in practical terms however--developmentally, we could conclude that the mind and the world are compatible constructions and the individual somehow learns to find his way through the physical world and to deal appropriately with its objects as he subjectively perceives them.

James was not an idealist, although his psychology and philosophy come close to idealism at times: he was concerned with developing a realist epistemology which included an independent world of physical objects and relations. Thus, he was faced with the problem as to how much the thought of any object owed to the properties of the object itself. As will be shown in detail in Chap. 4, James believed that thought was more freely selective in some areas of

the intellectual operations than in others. If the mind selected the world that it 'knows', James realized that selection was constrained in several ways. The nature of the physical objects themselves had a major role to play in the generation of thoughts about them. The problem of how the mind knows the world cannot be resolved in the present context. James' theories of reality and volition must first be discussed, and this task is undertaken in the following three chapters. The purpose of this analysis has been to describe the structures James devised for consciousness, to assess the internal consistency of his construction, and to isolate the problems or implications that the theory of the stream of consciousness has for his functional psychology.

The Roles of Percepts and Concepts in the Structure of Consciousness

Thus far, we have not made any categorical distinctions between the types of thoughts or feelings that make up the stream of consciousness. Sensations, perceptions, conceptions, volitional feelings, and beliefs have all been treated together in an effort to analyze their common structure. But the notion that feelings are structurally equivalent--that they are irreducible unities in consciousness--does not imply that they cannot be differentiated according to their functions, and even more basically than that,according to the types of reality they represent in consciousness. James makes one broad categorical distinction between feelings in terms of their cognitive capacities. Broadly speaking, in James' definition, all feelings are 'cognitive' in the sense that they deal with independent objects. Essentially, however, the worlds of reality are known or given to the individual through percepts and concepts.

Percepts and concepts serve different functions in the adjustment of the individual but the distinction between them goes deeper than the functional level; to have a percept, the observer must be in the presence of the physical object which is experienced as the 'objective' component or kernel of the thought. Similarly, concepts take their objects from the realm of necessary truths and relations, or from the abstracted properties of physical objects, so that they stand as universals in relation to the particulars of the physical world. Percepts and concepts are both experienced as feelings in the stream of consciousness and their isolation for purposes of analysis should not be taken as indicating that they do not follow the broad structural definition of thoughts or feelings outlined above. Rather, they are distinguished throughout James' works as the two major types of feelings which are cognitive of the worlds of reality. Before discussing the structures of the worlds that are cognized by consciousness, it is necessary to define more specifically what percepts and concepts are as structures in consciousness. Furthermore, the specific discussion of percepts and concepts is necessary to show something of the relationship <u>between</u> thoughts in the stream of consciousness.

The relationship between percepts and concepts, and the difficulty of establishing criteria for distinguishing between what would constitute a percept as opposed to a concept is more complex than the simple distinction given above implies. Moreover, establishing criteria as to what the perceptual verification of a feeling or thought in consciousness was to mean, was a problem that James struggled with throughout his career. This section will thus deviate from the earlier parts of this chapter because it is necessary to go beyond the <u>Principles</u> and into James' pragmatic writings and his final

philosophy to show the development of James' thought regarding the relationship between perception and conception. This section does not, therefore, follow the chronological development of James' thought, but instead discusses his development in terms of the specific problems he had with perception and conception. Finally, it will be necessary to return to perception and conception in Chap. 9 to assess James' last attempts to resolve his problems from the perspective of his developed epistemology and metaphysic.

In setting up the characteristics of the stream of consciousness, James claimed that feelings were cognitive--that they dealt, by definition, with objects independent of themselves (see James, 1890, 1, p. 225). But this definition had to be refined when James came to consider the objects of thought and their correlates in the various and varying worlds of reality. Thoughts of physical objects had different functional implications for the individual than thoughts of metaphysical objects for example. The conditions of the arousal of thoughts in consciousness also varied as a function of the typology of their objects. Thus, the definition that thought is cognitive came to mean that the thought had an object, or more specifically, was an object, and that the determination of the status of that object might be given in the thought itself or it might be necessary for the individual to take further steps to determine what category the object belonged to. 'Cognitive' in the broad sense of the Principles refers to the conception of thought as broadly intentional in that the thought means something specific to the individual--for example, that 'Columbus discovered America'. Thus, when James came to write The meaning of truth, he used the term cognitive in a more restricted sense:

> But let us keep closer to the path of common usage,

> and reserve the name knowledge for the cognition of 'realities', meaning by realities things that exist independently of the feeling through which their cognition occurs. If the content of the feeling occur nowhere in the universe outside the feeling itself, and perish with the feeling, common usage refuses to call it a reality, and brands it as subjective feature of the feeling's constitution,or at most as the feeling's dream (James, 1909, pp. 5-6).

In The meaning of truth James makes a clear distinction between those feelings which are cognitive and those which are not: "The feeling of q knows whatever reality it resembles, and either directly or indirectly operates on. If it resembles without operating, it is a dream; if it operate without resembling, it is an error" (James, 1909, p. 28). At the same time, "All feeling is for the sake of action, all feeling results in action" (James, 1909, p. 22). James reconciles these two statements by stating that only percepts, and not concepts, need mirror and operate upon external reality (see James, 1909, p. 30). However, the relationship between perception and conception is such that conception must eventually be brought back to the level of perception for verification, so that the demand for verification applies indirectly to conception as well (see James, 1909, pp. 32-33). It is necessary for James to assert that concepts must ultimately lead back to percepts because he believes that knowledge is a product of the interaction between consciousness and the world. To this end, he says, "Knowledge of sensible realities thus comes to life inside the tissue of experience. It is made; and made by the relations that unroll themselves in time" (James, 1909, p. 106). Percepts and concepts are therefore distinguished as follows:

> A percept knows whatever reality it directly or indirectly operates on and resembles; a conceptual feeling, or thought knows a reality, whenever it actually or potentially terminates in a percept that operates on, or resembles that reality, or is otherwise connected with it or with its

> context. The latter percept may be either sensation or sensorial idea; and when I say the thought must terminate in such a percept, I mean that it must ultimately be capable of leading thereto,--by the way of practical experience, if the terminal feeling be a suggestion; by the way of logical or habitual suggestion, if it be only an image in the mind (James, 1909, pp. 32-33).

Perception is defined as the "consciousness of particular material things" (James, 1890, 2, p. 77); as such, perceptions are 'representative', exist over time, and are selected from the visual array. They have these particular qualities because they represent the world of experience as it is 'got' by the senses:

> No matter how small a tract of it be taken, it is always a much-at-once, and contains innumerable aspects and characters which conception can pick out, isolate, and thereafter always intend. It shows duration, intensity, complexity or simplicity, interestingness, excitingness, pleasantness or their opposites. Data from all our senses enter into it, merged in a general extensiveness of which each occupies a big or little share. Yet all these parts leave its unity unbroken. Its boundaries are no more distinct than are those of the field of vision. Boundaries are things that intervene; but here nothing intervenes save parts of the perceptual flux itself, and these are overflowed by what they separate, so that whatever we distinguish and isolate conceptually is found perceptually to telescope and compenetrate and diffuse into its neighbours. The cuts we make are purely ideal (James, 1911, pp. 49-50).

Because the world of pure experience at first appears as a monistic totality, "Every perception is an acquired perception" (James, 1890, 2, p. 78). We learn to regard certain objects, and particular qualities of the chosen objects as important, relevant, or interesting and therefore as the 'essentials' or 'essence' of the object; thus, "in our perception of shape and position it is really difficult to decide how much of our sense of the object is due to reproductions of past experience, and how much to the immediate sensations of the eye" (James, 1890, 2, p. 79). While the world that percepts reflect is fleeting and unstable, percepts themselves are in part 'fixed'. We find the object we have learned to expect to find.

Perception keeps us 'in touch' with the real world, and if we look for its 'fixed propensities' as we have come to recognize them, we are also able to perceive changes or differences as the objects of perception change.

Concepts, on the other hand, are rigid, static, immutable, and they include awareness of objects when the physical objects are not present to the senses. Perceptions are fleeting because they are only experienced in the presence of the physical object itself, which changes phenomenally on each presentation, so that the same perception is never experienced exactly the same way twice. Concepts are 'fixed' mental structures--"we say what each part of the sensible continuum is and all these whats are concepts" (James, 1911, p. 50).

But cognition cannot be divided quite so neatly as these definitions may imply. Experientially concepts and percepts become so intermingled that it is difficult at times to distinguish between them:

> 'Things' are known to us by our senses, and are called 'presentations' by some authors, to distinguish them from the ideas or 'representations' which we may have when our senses are closed. I myself have grown accustomed to the words 'percept' and 'concept' in treating of the contrast, but concepts flow out of percepts and into them again, they are so interlaced, and our life rests on them so interchangeably and undiscriminatingly, that it is often difficult to impart quickly to beginners a clear notion of the difference meant (James, 1911, p. 47).

Conception and perception are mutually dependent cognitive faculties. Initially, cognition is dominated by perception; as the individual develops:

> The intellectual life of man consists almost wholly in his substitution of a conceptual order for the perceptual order in which his experience originally comes. ...Trains of concepts unmixed with percepts grow frequent in the adult mind; and parts of these conceptual trains arrest our attention just as parts of the perceptual flow did, giving

> rise to concepts of a higher order of abstractness (James, 1911, p. 51).

Without concepts, we would merely be able to 'experience' the world; we would not be able to 'change' the world, nor differentially divert our activities towards cognitively defined ends. Conception forms a congruent correlated mental reality which implicitly, if not always explicitly, is contrasted with the physical reality. Conception aids our 'understanding' of reality: "The whole system of relations, spatial, temporal, and logical, of our facts, gets plotted out" (James, 1911, p. 65). Moreover, new relations between concepts may be discovered. But:

> Nothing happens in the worlds of logic, mathematics or moral and aesthetic preference. The static nature of the relations in these worlds is what gives to the propositions that express them their 'eternal' character: the binomial theorem, e.g., expresses the value of any power of any sum of two terms, to the end of time (James, 1911, p. 68).

James sums up the function of concepts as follows:

> Concepts thus play three distinct parts in human life.
> 1. They steer us practically every day, and provide an immense map of relations among the elements of things, which, though not now, yet on some possible future occasion, may help to steer us practically;
> 2. They bring new values into perceptual life, they reanimate our wills, and make our action turn upon new points of emphasis;
> 3. The map which the mind frames out of them is an object which possesses, when once it has been framed, an independent existence. It suffices all by itself for purposes of study. The 'eternal' truths it contains would have to be acknowledged even were the world of sense annihilated.
>
> We thus see clearly what is gained and what is lost when percepts are translated into concepts. Perception is solely of the here and now; conception is of the like and unlike, of the future, of the past, and of the far away. But this map of what surrounds the present, like all maps, is only a surface; its features are but abstract signs and symbols of things that in themselves are concrete bits of sensible experience. We have but to weigh extent against content, thickness against spread, and we see that for some purposes the one, for other purposes the other, has the higher value. Who can decide offhand which is absolutely better to live or to understand life? We must do both alternately, and a man can no more limit himself to either than a pair

> of scissors can cut with a single one of its blades (James, 1911, pp. 73-74).

If our potential for knowledge is to be developed as highly as possible, concepts and percepts must play interacting roles. The static 'universal' abstract concepts allow the formulation of scientific, metaphysical, and ethical theories. But concepts always mean the same thing; therefore they are also "forever inadequate to the fullness of the reality to be known" (James, 1911, p. 78). Thus, the 'static' nature of concepts has both positive and negative value, depending upon the type of knowledge desired. The perceptual world is, on the other hand, rich, mutable, and real, but without conception, unstable and discontinuous, so that its rich relations are unavailable for 'appreciation'--they can only be experienced, or recognized as recurring events. Therefore:

> The two mental functions thus play into each other's hands. Perception prompts our thought, and thought in turn enriches our perception. The more we see, the more we think; while the more we think, the more we see in our immediate experiences, and the greater grows the detail and the more significant the articulateness of our perception (James, 1911, pp. 108-109).

Both concepts and percepts are feelings and both have different, and yet interpenetrating and dependent functions in assisting our relationship with reality. Both provide material and structure for the cognitive reorganization and understanding of reality, and both contribute to the construction of moral and metaphysical systems. But if James concludes that "Percepts and concepts interpenetrate and melt together, impregnate and fertilize each other. Neither, taken alone, knows reality in its completeness. We need them both, as we need both our legs to walk with" (James, 1911, pp. 52-53), his epistemology, as it is expressed in pragmatism, places a higher value on knowledge gained through perception than in the cognitive

juggling of concepts. In defence of percepts, he says:

> They end discussion; they destroy the false conceit of knowledge; and without them we are all at sea with each other's meaning. If two men act alike on a percept, they believe themselves to feel alike about it; if not, they may suspect they know it in differing ways. We can never be sure we understand each other till we are able to bring the matter to this test. This is why metaphysical discussions are so much like fighting with the air; they have no practical issue of a sensational kind. 'Scientific' theories, on the other hand, always terminate in definite percepts. You can deduce a possible sensation from your theory and, taking me into your laboratory, prove that your theory is true of my world by giving me the sensation then and there (James, 1909, pp. 39-40).

The function of cognition lies in the construction of concrete, public knowledge about the external world as it exists, and James' 'glorification' of perceptual verification is perfectly consistent with his evolutionary interests.

The Relationship Between Percepts and Concepts

James' theory of knowledge is based on the assumption that conception must ultimately be validated in perception. This means that the relationship between percepts and concepts is dependent on verification so that the application of concepts to describe the physical world cannot be done on an *a priori* basis. James gives precedence to perceptual knowledge, for concepts must lead, at least potentially, to percepts. Ayer, discussing *The meaning of truth*, writes:

> James addresses these essays to the analysis of knowledge, but it will be seen that so far as his arguments go, he might equally well have been speaking of belief. In all of them, his principal aim is to eliminate what he calls the 'epistemological gulf' which might be thought to exist between states of cognition and their objects by showing that the processes in which knowledge consists entirely 'fall inside the continuities of concrete experience' (Ayer, 1968, p. 292; internal quotations from James, 1909, p. 4).

Just as James tells us that all feeling exists for the sake of action, all conception would appear to exist for the sake of perception

(see James, 1909, p. 103).

In deriving all potential for knowledge from feeling, James believed a feeling to be cognitive if, and only if, it resembled something in the external world. If there is no resemblance, it is either an error or a dream (see James, 1909, p. 28). In this way we come to know what exists and what does not. But the question becomes more complex when we take this idea of resemblance in the wider context of James' theory of knowledge. It is in this wider context that Ayer's comment that James might 'well have been speaking of belief' is particularly apt. In "The tigers in India" (James, 1895/1909, p. 43), James tells us that we know immediately and intuitively, or conceptually and representatively. We know immediately or intuitively when we experience a particular percept of an object: in this case the mental content and the object are indistinguishable. I see, and cognitively identify the piece of paper upon which I am writing as a piece of white paper with particular characteristics so that "The thought-stuff and the thing-stuff are here indistinguishably the same in nature" (James, 1909, p. 47). But the case of conceptual, or representative knowledge is somewhat more complex. James claims that in these cases we 'know' an object by our mental pointing towards that object. He demonstrates this idea with the famous example of our knowledge of 'the tigers of India':

> The pointing of our thought to the tigers is known simply and solely as a procession of mental associates and motor consequences that follow on the thought, and that would lead harmoniously, if followed out, into some ideal or real context, or even into the immediate presence, of the tigers. It is known as our rejection of a jaguar, if that beast were shown to us as a tiger; as our genuine assent to a genuine tiger if so shown. It is our ability to utter all sorts of propositions which don't contradict other propositions that are true of real tigers. It is even known, if we take the tigers very seriously, as actions of ours which

> may terminate in directly intuited tigers, as they would if we took a voyage to India for the purpose of tiger-hunting and brought back a lot of skins of the striped rascals which we had laid low (James, 1895/1909, p. 43).

The two types of knowledge are thereby equated, for in the first case we are actually in contact with the object of our conception and in the second, we are potentially able to reach it. In both cases, the thought has already ended, or is potentially capable of ending, in perception. Therefore, James says, we 'know' the object in both cases, because there is a direct correspondence between knowledge and object (see James, 1909, pp. 44-45). Our conceptions of objects appear to be determined by external factors:

> I hope you may agree with me now that in representative knowledge there is no special inner mystery, but only an outer chain of physical or mental intermediaries connecting thought and thing. To know an object is here to lead to it through a context which the world supplies (James, 1895/1909, p. 46).

The world therefore supplies the context for our conceptual knowledge about the tigers--what we might think about tigers is at least in part restricted to what we might perceive if we actually encountered a tiger. James is implying that those conceptions that count as knowledge so count by virtue of resembling the world. Knowledge, according to James, consists of the experienceable relations, supplied by the world, between the knower and the known. And here, of course, he runs into difficulties: all thought processes that lead to verifiable conclusions do not necessarily 'resemble' the world. The degree of necessary resemblance between concepts and percepts is a point that causes James tremendous difficulties and he vacillates accordingly. As Ayer shows, James attempts once again to rectify his position regarding the required degree of resemblance between percepts and concepts in an essay called "The relation between knower and known" (James, 1904/1909, pp. 102-120):

> In the essay on 'The Function of Cognition' which was written twenty years earlier, James had attempted to deal with examples of this kind by taking the cognitive thought to be what he called the feeling of a quality q and then laying it down that 'the feeling of q knows whatever reality it resembles, and either directly or indirectly operates on'. He took the factor of resemblance to be primary and brought in the causal factor mainly as a means of determining which of the several realities that the feeling of q might resemble was the one that it knew. He now sees, however, that for a thought to be cognitive of an absent object, it is neither necessary nor sufficient that there should be any qualitative resemblance between them. It is not necessary because the object may be thought of only by name or description, without the accompaniment of any image; and even if there is an image, it does not have to be clear or accurate in order to fulfil its cognitive function. It is not sufficient because, as we have repeatedly seen, the mere fact that two things are similar or even identical in quality in no way entails that they stand in any relation of reference. So even if one does take the cognitive thought to be an image 'certain extrinsic phenomena, special experiences of conjunction, are what impart to the image, be it what it may, its knowing office'.
>
> In the example chosen, James remarks that if he could not describe the Hall that he was thinking of, or direct someone to it, or recognize it when he came upon it, then even though his thought consisted in an image which in some degree resembled it, the resemblance would be no more than a coincidence. ...In short, what makes the thought cognitive of the object is that one leads to the other by an experiential path which feels 'right' at every stage. As James puts it, 'there is experience from point to point of one direction followed, and finally of one process fulfilled (Ayer, 1968, pp. 293-294; internal quotation from James, 1909, p. 105).

In "The relation between knower and known", James returns to the position he took earlier in the Principles. To be cognitive, the thought simply has to 'mean' the particular object but it does not have to resemble it in a definable sense. James took issue with J.S. Mill's theory of a representative form of conception in the Principles (see James, 1890, 1, pp. 470-471; see also J.S. Mill, 1872, p. 393), stating that instead, only sensations may resemble their objects (see James, 1890, 1, p. 147)--a highly debatable point in itself. He insists that the fringe gives the concept its specific meaning each time the concept appears in the stream of consciousness (see James, 1890, 1, p. 472). At the same time James defines

the meaning of the concept in terms of its ability to:

> lead to a remoter state of mind which either acts upon the reality or resembles it. ...The stuff of which...thoughts are composed is symbolic, and a thought attests its pertinency to a topic by simply terminating, sooner or later, in a sensation which resembles the latter (James, 1890, 1, p. 471).

This perhaps makes James' position more lucid, even if we are not entirely clear on how to categorize conceptualization. James comes very close to stating that conceptualization can be imageless; he does state that often, concepts are merely denotative--that is, their 'objects' are pointed out or referred to rather than expressed (see James, 1890, 1, p. 463). We can conceive of objects which as yet have no representational status (for example, a perpetual motion machine (see James, 1890, 1, p. 463), but James makes it clear that:

> Most of the objects of our thought, however, are to some degree represented, as well as merely pointed out. Either they are things and events perceived or imagined, or they are qualities apprehended in a positive way. Even when we have no intuitive acquaintance with the nature of a thing, if we know any of the relations of it at all, anything about it, that is enough to individualize and distinguish it from all the other things which we might mean (James, 1890, 1, p. 463).

Psychologically speaking, the object is specified in the particular conceptual thought itself; the concept is 'illuminated' by the fringe so that the thought 'means' this and not that, about the tigers in India, or about Memorial Hall.

But there are still difficulties: the means through which the concept 'leads' to a percept must still be described in terms of internal mental processes, and 'external' experience. In the Principles, James essentially says that a concept is true--in the sense that the topic of the thought is pertinent--if a sensation resembling the thought is achieved (see James, 1890, 1, p. 471). In "The tigers in India", James' definition of conception becomes

more overtly 'representational' as the concept is described as 'resembling the object' (see James, 1895/1909, pp. 45-48). By now he had gone back to the view of the Principles, insisting that a concept need not be an image per se, but need resemble the object only to that degree which is necessary to bring us to a perception of the object. There is a double-sided difficulty with this position: in the first place, it is difficult to make any clear psychological statement about the way in which the concept can be said to resemble the object at all. The subject-object problem is a major source of difficulty throughout James' psychology, for it was explicitly shown above that thoughts in the stream of consciousness bear little resemblance to physical objects, and James is ratifying this conclusion in his psychology and in his 1904 paper. Verification, in this case is essential to bring the thought itself to a satisfactory conclusion. Verification confirms the 'meaning' of the thought which instigated the verification process through the intentional nature of the meaning. That is, subject-object relations are satisfied only when verification is made a part of the psychological process. The second aspect of the problem is that James seems still to be restricted to the notion that a given conception must eventually lead to a perception if it is to be verified and hence judged to be cognitively true of reality. To quote Ayer again at some length:

> It is, I think, a fault of both examples that James does not sufficiently distinguish between a set of experiences which would constitute what Peirce called the 'development' of the thought of an object and a set of experiences which would lead to the actual perception of the object. It is, indeed, possible that the two should coincide; talking of the Memorial Hall might immediately lead one to take one's friend to see it; thinking of the tigers might set up an immediate disposition to book a passage to India. But even in these cases what fixes the reference is not just that the train of experiences leads to the perception of the

> object, but rather that the perception is, or would be, taken as the fulfilment of the thought. This applies also to the experiences which come between the thought and the perception. In the example of the Memorial Hall, James makes much of the fact that these intervening experiences themselves correspond to previous images, but this is clearly not necessary except in so far as the correspondence satisfies the criteria which one must have for locating the object; if one did go to hunt for tigers, one might have very little idea of what one would encounter on the way. The intervening experiences only come into the picture to the extent that they also develop the thought, and this they may do without having any tendency to lead to the perception of the object.
>
> To see that this must be so, one has only to consider that in a great many cases, there is no possibility of our ever getting to perceive the objects to which our thoughts refer. Sometimes the impossibility is only practical, as when we think of things or events which are located in the distant future or very far away in space, but very often it is logical. Even if we leave abstract objects and fictitious objects out of account, and confine our attention to what is perceptible, not everything that is in its own nature perceptible is capable, even in theory, of being perceived by everyone who may chance to think of it. There is a sense in which we cannot perceive the thoughts and feelings of others, and what is more important in the present context, we cannot now perceive events which are located in the past. This does not mean, however, that we cannot think about them (Ayer, 1968, pp. 295-296).

Ayer is making two important points here. The distinction must be made between the 'intervening experiences' which lead to the fulfilment of the concept, and the verification of the concept in perception per se. In a case where the concept of the object includes the means of relocating it, then the intervening experiences serve as partial verifications of the concept, and the process whereby the concept is 'translated' into a percept is describable. But when one seeks a new object, the intervening experiences are not part of the original conception and can only aid in the development of the thought in a purely secondary way.

Furthermore, while James has concentrated upon the necessity for concepts to be 'translatable' into percepts, he recognizes that concepts are often substituted for percepts in our mental experiences

of the world:

> Most thought-paths, it is true, are substitutes for nothing actual; they end outside the real world altogether, in wayward fancies, utopias, fictions, or mistakes. But where they do re-enter reality and terminate therein, we substitute them always; and with these substitutes we pass the greater number of our hours (James, 1904/1909, p. 113).

In this case, the 'intervening experiences' could serve to bring the thought to a satisfactory conclusion within the conceptual system itself. But Ayer is asking whether or not perception is the necessary fulfilment of thought, and he provides examples to show that some types of thinking are logically incapable of leading to perception. And by the time James came to write Some problems of philosophy, he had come to believe that the independence of the conceptual system had to be ensured and he no longer placed the same emphasis on the need to verify concepts in percepts:

> The map which the mind frames out of them [the concepts] is an object which possesses, when once it has been framed, an independent existence. It suffices all by itself for purposes of study. The 'eternal' truths it contains would have to be acknowledged even were the world of sense annihilated (James, 1911, p. 74).

Conceptual systems exist in their own right. Conception is a potentially two-directional process; it may have as its end the verification of an idea in the external world, and it may equally well follow the goal of extending itself--thoughts may quite validly lead to 'resting places' or 'verifications' within the conceptual schema itself, independent of any possibility of perceptual verification. Some problems of philosophy is James' final statement on the status of percepts and concepts. And what is most interesting about this final statement is the correspondence between it and James' ideas on the necessary truths as he developed them in the Principles. As James so adamantly states:

> None of these eternal verities has anything to say about

> facts, about what is or is not the world. ...All that these sciences make us sure of is, that *if* these things are anywhere to be found, the eternal verities will obtain of them (James, 1890, 2, p. 663).[14]

Further, the direct application of the eternal verities or necessary truths to the external world is impossible. In speaking of the application of arithmetic to nature, James says:

> The same real things are countable in numberless ways, and pass from one numerical form, not only to its equivalent ...but to its other, as the sport of physical accidents or of our mode of attending may decide. How could our notion that one and one are eternally and necessarily two ever maintain itself in a world where every time we add one drop of water to another we get not two but one again?--in a world where every time we add a drop to a crumb of quicklime we get a dozen or more?--had it no better warrant than such experience? At most we could then say that one and one are *usually* two (James, 1890, 2, p. 655).

Given that a fair amount of our conceptual material cannot be applied directly to nature, James' stress (in the pragmatic writings) on the need to verify conception in perception is at first puzzling. James is struggling with several related problems throughout his psychology and philosophy. If consciousness is to be efficacious, then thoughts must be intrinsically meaningful; that is, they must facilitate particular actions, or point to other, related conceptions. The fact that, according to James, a concept has discoverable relations with the external world, and equally discoverable relations with other thoughts, gives conception the necessary functional plasticity to support his view that consciousness is efficacious. But this very plasticity of conception creates difficulties in accounting for our cognitive capacities. The subject-object distinction now becomes a

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14. There are problems with the resolution that James comes to, regarding the relationship between percepts and concepts in *Some problems in philosophy*. Briefly, his solution incorporates elements of the rationalism he was trying to overcome. This problems is discussed in Chap. 9.

serious problem: if concepts are not always representational and if some conceptual systems contradict the experienceable relations in the natural world, how can we ever be truly cognitive of anything? The answer is of course that we can only be sure that our conceptions are true when they are translated into perceptions. This translation eliminates:

> 'the epistemological gulf' so that the whole truth-relation falls inside of the continuities of concrete experience, and is constituted of particular processes, varying with every object and subject, and susceptible of being described in detail (James, 1909, p. 41).

To ensure that the epistemological gulf between subject and object, in fact, between percepts and concepts, really can be eliminated, James sought, through the methodology of pragmatism, to show that true concepts are always potentially capable of terminating in percepts. As Ayer writes:

> He admits that we can have a 'notion of imperceptibles like atoms or ether', but maintains that such notions are empty unless they can be 'cashed' in terms of sense-perception. 'Scientific theories,' he says, 'always terminate as definite percepts.' These percepts, or to speak more strictly, the sensations out of which they are elaborated, are 'the only realities that we ever directly know' and since the realities that we know indirectly must be reducible to them, they are, in a sense, the only concrete realities that we can know at all (Ayer, 1968, p. 229).

Verification becomes an integral part of the defined relationship of percepts and concepts. And this in turn means that the success of James' psychology may very well depend on the success of his pragmatic methodology.

James also tries to eliminate the epistemological gulf between subject and object in his radical empiricism. He tries to show "that thoughts and things are absolutely homogeneous as to their material and that their opposition is only one of relation and function" (James, 1905/1967c, p. 137) and "thoughts in the concrete are made of the same

staff as things are" (Brennan, 1961, p. 23). When James gave thoughts and things the same ontological status, he extended this 'legislated equality' to his theory of knowledge. If all thoughts or concepts could be shown to have their real ends in perception and thought processes could be shown to intrinsically lead the individual towards verification in the perceptual world, then James would have evidence for an identity theory between mental and physical objects.

Basically, this would mean that the percept serves two major functions; it provides concrete knowledge about the external world and it also provides the building blocks of the conceptual system. The on-ject in the mind and the object in the world exist in different sets of relations, and it is therefore the context of existence, rather than the strict mental/physical distinction which allows objects to be categorized. Pragmatism and radical empiricism can therefore be studied as support systems for the new theory of consciousness outlined in the Principles. The relationship between percepts and concepts is complex, and James' discussion of that relationship is not always consistent. The criteria of evidence for the 'realness' of an object differ according to the nature of the object so that James' hierarchical structure of reality--described psychologically in terms of belief--determine the verification procedures. The psychological dynamics of belief must therefore be examined, so that concepts can be distinguished in terms of the realities they describe. This will provide a means of assessing the criteria of evidence: if the atoms in the void are imperceptibles, what 'sensations' or 'perceptions' can science provide to make us 'realize' their existence? And what in fact is the relation between the mathematical world where two plus two will always equal four, and the 'natural' world where two plus two is only sometimes equal to four?

CHAPTER 4

THE STRUCTURES OF REALITY:
AN ANALYSIS OF BELIEF

Historical Antecedents

James made cognition a necessary condition for thought--thought "always appears to deal with objects independent of itself" (James, 1890, 1, p. 225)--so that by definition, thoughts are objective. But thoughts are also subjective because the thought is coloured or fringed by the mental state of the thinker. In fact, the selective predispositions of the thinker have a determinative influence over which 'objects' or 'objective qualities' will be thought and which will be ignored. James insisted, moreover, that thoughts were indivisible unities in the experience of the thinker so that the object of the thought was not a copy of the object as it existed in the physical world, but the totality of the thought itself. The separation of thoughts into 'objective' and 'subjective' qualities is thus an artificial separation, undertaken by the psychologist or introspective thinker in an attempt to discover what is meant by cognition. James' definition of thought is based on a ratification of the subject-object distinction and the critical issue that arises from James' account of the structures of consciousness is the problem of what it is that thoughts actually know about the several worlds of reality. If thoughts are subjective-objective units, the nature of thought will in part depend upon the nature of the independent objects or external referrents of thought and in part on the nature of the thinker. This chapter will therefore explore the correspondence between thought objects and objects themselves.

If James was determined to construct a unified conception of consciousness, he was also determined to construct a realist epistemology. He therefore makes the distinction between imagination, and belief in the independent reality of an object, the primary

criterion of cognition. "Belief" he says, "is thus the mental state or function of cognizing reality. As used in the following pages, 'Belief' will mean every degree of assurance, including the highest possible certainty and conviction" (James, 1890, 2, p. 283).

Wild points out that James follows Brentano in making the distinction between belief and thought: while belief cannot 'happen' without thought, "the mere thought of the object may exist as something quite distinct from belief in its reality" (James, 1890, 2, p. 286). Wild therefore says:

> We cannot believe in any object without first thinking of it in some way. But the two operations are quite distinct. As Brentano says, "it is then twice present in consciousness, as thought of, and as held for real or denied". James agrees with this distinction and emphasizes it in his own thought (Wild, 1969, p. 142, internal quote from Brentano appears in James, 1890, 2, p. 286).

Brentano believed that the psychic act which answers as to whether the object is real or not was best called judgement. James states that he prefers to call the psychic act 'belief' (see James, 1890, 2, p. 287), and Wild writes that James wished to move away from the 'intellectual operations' implied by making acceptance of the object dependent on judgement. Instead, he writes, James was most concerned with grounding the acceptance of an object in the impact it makes upon the sensory organs, so that belief is grounded in perception and awareness of self (see Wild, 1969, p. 142). This is entirely reasonable; at the same time, James had a philosophical warrant for his selection of 'belief' over 'judgement' in the British empiricist tradition.

James bases cognition on belief for several reasons. The mind-body dualism that he adopted at the outset of the Principles demanded a distinction between subjective and objective phenomena: while the mind is cognitive of reality, it is not cognitive in the sense

of 'copying' the objects of the external world. By making belief the warrant for reality, James follows the empiricist tradition wherein the world was known by means of sensations received by the individual. While he rejected the passive sensationism which characterized nineteenth century empiricism, notably in the works of the Mills, James remained true to the spirit of empiricism. Knowledge of 'real' objects consists of received sensations, 'conceptualized' according to the rules that describe the operations of the mind. The individual <u>believes</u> that these sensations are accurate representations of an external world, but his knowledge of that world is in fact mediated through his sensory organs. J.S. Mill writes that the senses:

> tell us our sensations. The objects awaken in us, certain states of feeling. A part, at least, of what we know of the objects, is the feelings to which they give rise. What we term the properties of an object, are the powers it exerts of producing sensations in our consciousness (Mill, 1872, p. 7).

Mill goes on to say "that an object is to us nothing else than that which affects our senses in a certain manner; that we are incapable of attaching to the word object, any other meaning" (Mill, 1872, p. 8). James concurs with Bain's criticism that Mill neglects the emotional and volitional elements of belief and regards his own account as "more complete" (James, 1890, 2, p. 322), but he accepts Mill's general dictum that it is the states of feeling, aroused in us by objects, that we know. As Brett writes, James "does not discuss reality, but the sense of reality" (Brett, 1942, p. 88).

James is quick to point out that he is indebted to his predecessors for the major assumptions of his theory of belief.[1]

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1. (See James, 1890, 2, p. 322). James' theory of belief owes more to the philosophical tradition than any of his other psychological constructions.

Hume's postulate that cause and effect relations were effects produced in the mind, and did not 'exist' between the objects themselves (see Hume, 1739/1962, III, vii, pp. 44-45), provides the 'skeptical' background for James' theory of reality, but James' most important inspiration came from Bain who insisted that belief was correlated with preparedness to act (see Bain, 1875/1888, p. 505). Bain covered the whole range of 'believable' ideas in this scheme, including the intellectual, or theoretical postulates that are held in consciousness but seldom acted upon (see Bain, 1875/1888, p. 507). Belief is therefore opposed to doubt and inquiry rather than to disbelief; belief and disbelief are psychologically the same state, for in either state, the "mind is in a condition of certainty" (Bain, 1875/1888, p. 509). James affirmed Bain's statement[2] and incorporated Bain's distinction into his psychology.

Taking belief as the means of cognitive affirmation means that James is able to ignore ontological distinctions between the categories of objects as they 'really' are, and the same objects in the consciousness of the thinker. That is, some objects are not 'absolutely' known to exist in a given context, while others are merely believed to have independent referrents. Ontological distinctions are made between the mind and the physical world and between the various sub-worlds of reality. The mind varies in the degree of assent that is given to any 'belief' statement--to the extent that it is absolutely convinced of the independent reality of some objects and events, and, at the opposite end of the spectrum, struggles to maintain the sense that a given idea is 'true'. The mind also varies

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2. (See James, 1890, 2, pp. 284, 322). James does not specifically acknowledge Bain's influence here, but he does so in the literature review at the end of the chapter.

in the means through which assent is given to the reality of the object in question, and in this, too, James follows the empiricist tradition. Unity of mind is preserved in the sense that mental fiats must be given to any and all 'believable' objects.

The Hierarchy of Selection

James divides the set of cognizable objects into seven categories in order to analyze the types of belief that are inspired by objects. The objects of cognition are grouped into seven possible worlds of reality and these are: 1) the world of sense, 2) the world of science, 3) the world of ideal relations, 4) " 'idols of the tribe', illusions or prejudices common to the race", 5) the supernatural worlds, 6) the worlds of individual opinion and 7) the worlds of madness and vaguery (see James, 1890, 2, pp. 292-3). And, James says, "Every object we think of gets referred to one world or another of this or of some similar list" (James, 1890, 2, p. 293). The 'ranking' of the categories varies from individual to individual so that each thinker chooses one reality to be the ultimate reality and "From this world's objects he does not appeal" (James, 1890, 2, p. 293). The rest of the sub-worlds are 'believed in' according to the degree of 'reality' the individual invests in them but the primary reality is believed in with absolute certainty (see James, 1890, 2, p. 294). James logically goes beyond individual idiosyncracy in the selection of the ultimate reality, for he asserts that the world of sense is given the primary fiat of having an absolute status against which the claims of all other realities are measured (see James, 1890, 2, p. 294). James also ranks the sub-worlds in terms of the freedom of the individual to select those objects, relations, propositions, etc. to 'be' the most real for himself. Within the world of sense,

most of our fiats are involuntary; if we attend to the object at all, we attend to it with an implicit belief in its independent reality.

James made selectivity one of the essential characteristics of the stream of consciousness and the selectivity of the stream of consciousness is described according to a hierarchical model.[3] Ethics is given the rank of greatest autonomy, followed by aesthetics, empirical reasoning, and selection in the sensible world; finally, physiological selections form the base of the structure (see James, 1890, 1, pp. 284-287). The given levels are ranked in accordance with the degree to which they are independent of objects and relations as they are found in the world of sensory experience. Ethics attains top rank because choice is seen to be supreme and because it is neither governed nor coerced by objects and relations in the practical everyday world.[4] Aesthetics follows, for the artist is freer to accept or to reject sensory elements in his work than is the empirical scientist. The rational connection of objects and relations, or reasoning, is given a still lower status for its postulates are most influenced by the physical world (see James, 1890, 1, p. 287). The selections from the physical world come next, and at bottom are found the physiological selections of the sense organs themselves: this last category admits no conscious intervention. Selections

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3. See Chap. 3, pp. 189-193, for a more comprehensive description of the hierarchy. No attempt has been made here to specifically relate the worlds of reality to the individual selective mechanisms. Some modes of selection seem more appropriate to some of the worlds of reality than others. There is an obvious correspondence between the world of sensory objects and the senses as selective mechanisms and seemingly little correspondence between ethical selections and the world of sense. As the argument develops however, it will become clear that the modes of selection interact in determining the objects in each sub-world, or at least in determining the individual's behaviour in regard to the objects of each sub-world.

4. The validity of this position is debated in the next chapter.

are made according to the physical structure of the organ (see James, 1890, 1, pp. 284-285). It is clear, then, that the 'freedom' of consciousness to select objects is correlated with the degree to which the physical world imposes its own structures on consciousness, and the degree to which selection is constrained by the physical construction of the body.

This raises the question as to whether there <u>are</u> any levels of reality which are not constrained by the physical world to some degree. For Knox, who attempts to establish James as an evolutionary psychologist, ignoring any other philosophical commitments James may have had, the answer is no. Knox argues that James connects ethical and metaphysical acts to adaptive acts through the behaviour or conduct of the individual and the concept of selection. It matters, in a Darwinian, and therefore a psychological sense, whether or not an idea is 'true', or 'believable'; truth can be defined psychologically as that which facilitates the organism's survival, while error is that which does not (see Knox, 1914, p. 69):

> James's view may be summarily stated as the theory that what determines the survival of beliefs is an inter-play between conscious selection and natural selection. That is clearly what the view of experience as experimentation, taken in conjunction with the "paramount reality of sensations", necessarily entails. We make the environment to fit; but it is our obligation to cut our coat according to our cloth that gives us a chance of really using our brains (Knox, 1914, pp. 75-76).

According to Knox, James establishes a hierarchy of needs for the organism; physical needs form the base of the pyramid, and there is a continuity between the basic physical needs and the higher spiritual needs, expressible in the conduct or behaviour of the organism (see Knox, 1914, pp. 70-71). Through his selections, man creates his own world so that the 'adaptive' world is as much a product of

creation as is the metaphysical/ethical world (see Knox, 1914, pp. 77-78). But whether or not Knox's appraisal of James' intentions holds up under analysis depends on whether or not James did intend his theory of ethics to have an exclusively evolutionary basis, related to adaptation in the physical world.[5]

Bixler and Stroh both make the point that James was committed to a 'realist' epistemology, and James' realism as they describe it, is compatible with Knox's description of James' Darwinism. Bixler writes:

> It must be remembered that belief is an active assertion as to what shall be real for us. Psychologically it is a similar activity to that attention which in making one possibility more real than others actually brings new reality into being. Experience in its active aspect is conscious experimentation. Believing is part of the whole selective process and it creates as it selects and holds. This is not true in all cases, of course, for the environment is not by any means entirely pliable, and the world cannot be molded to accord with all our desires. But within a restricted sphere, choice and creation do operate. And religious beliefs lie in this sphere.
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> James always maintained that this position was compatible with the point of view of realism. The creation of reality through attention, for example, is not purely a subjective process. We do our part in the attending process (Bixler, 1926, p. 96).

Unlike Knox, however, Bixler devotes the rest of his book to the analysis of the problems of James' theory of truth, for he argues that James had to balance his commitment to realism against his even stronger commitment to the view that consciousness is efficacious. Stroh writes that for James:

> the human mind cannot be understood as cut off from the natural world, but rather must be understood dynamically as both affected by it and reacting to it. The mind is anything but self-enclosed. It is not a mere passive observer or knower, nor a purely theoretical instrument. It is primarily a practical instrument engaged in action (Stroh, 1968, p. 124).

As the analysis of James' theory of reality progresses, Knox's

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5. This problem is discussed in Chap. 6, pp. 405-411, 423-460.

link-up of the sensory and ethical worlds through the mechanisms of selection and behaviour will be shown to be too superficial a view of James' epistemology to be tenable. First, it will be shown that James was more committed to ensuring that consciousness was at least potentially efficacious than he was with connecting the worlds of reality through selection or behaviour. Secondly, it will be shown that the objects of the various worlds of reality are selected by qualitatively distinct means; each sub-world has "its own special style of existence" (James, 1890, 2, p. 291). The 'rules' for selecting objects of belief and the methods of verifying the reality of objects therefore vary as a function of the particular nature of each of the sub-worlds.

The differential degrees of freedom to believe or to doubt that an object, relation, or postulate is real or true raises problems in relation to the efficaciousess of consciousness. Consciousness has been described as a structural unity so that the same interal dynamic processes are supposed to operate in determining the 'realness' of objects in any of the sub-worlds. But if consciousness is 'coerced' into assenting that physical objects are real, that 'mythological objects' are real in their special world and that religious systems at the very least give guidance as to which moral postulates should be believed in, then the problem of how constrained consciousness is at all levels arises. The sub-worlds may also be interdependent; the assent given at one level of reality may influence whether or not affirmation is given to an object in another sub-world. This will be demonstrated in regard to the objects of science and the world of sense. If the worlds <u>are</u> interdependent then beliefs in ethical, aesthetic, or metaphysical postulates may be influenced by beliefs, more or less coerced, in other stratas of reality. The effect of

other beliefs on metaphysical hypotheses will be examined below.

The possible interdependence of selections is important because James did not believe that mind was efficacious in the sense of possessing any 'creative' power. All that consciousness could do was to select objects from the possibilities presented to it:

> The soul presents nothing herself; creates nothing; is at the mercy of the material forces for all possibilities; but amongst these possibilities she selects; and by reinforcing one and checking others, she figures not as an 'epiphenomenon', but as something from which the play gets moral support (James, 1890, 2, p. 584).

and:

> The effects of interested attention and volition remain. These activities seem to hold fast on certain elements, and by emphasizing them and dwelling on them, to make their associates the only ones which are evoked. This is the point at which an anti-mechanistic psychology must, if anywhere, make its stand in dealing with association. Everything else is pretty certainly due to cerebral laws. ...But even though there be a mental spontaneity, it can certainly not create ideas or summon them ex abrupto. Its power is limited to selecting amongst those which the associative machinery has already introduced or tends to introduce. If it can emphasize, reinforce, or protract for a second either one of these, it can do all that the most eager advocate of free will need demand; for it then decides the direction of the next associations by making them hinge upon the emphasized term and determining in this wise the course of the man's thinking, it also determines his acts (James, 1890, 1, p. 594).

The efficaciousness of consciousness will therefore depend upon the 'freedom' of the selective functions of mind.

But the question of how freely selectivity operates is further complicated by James' theory of psychogenesis; whether selectivity really operates according to the hierarchical structure outlined above will depend upon whether or not James has built a dualism between the functions of consciousness into his psychology in order to avoid the possibility that ethical assents may be coerced.

The Problem of Front and Back Door Experience

In his theory of psychogenesis, James claimed that the mind is assailed in two ways and Brennan's description of the two modes of experience which act upon the brain is one of the most cogent in the literature:

> In The Principles of Psychology, James says that the word experience refers to two distinct ways in which the mind is "assailed", although the word's use is generally restricted to mean only one of those ways. The first type, the way of experence in the usual sense of the word, is the "front-door" way; here knowledge enters through the five senses, and the agents which affect the brain in this way immediately become the mind's objects. The second type of experience is the "back-door" way; here, knowledge originates "inside" the person, and the agents produce perceptions which take cognizance of something other than the agents.
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> In the case of front-door experiences, the agents are natural objects (like sunsets, etc.), which impress the brain "through the senses, and in the strict sense of the word give it experience, teaching it by habit and association what is the order of...(its) ways". But the agents of back-door experiences are in the brain itself or elsewhere in the body, being natural objects or processes "which equally modify the brain, but mould it to no cognition of themselves" (Brennan, 1961, p. 122; see also James, 1890. 2, pp. 626-627).

Front-door experience correlates with James' general description of our knowledge of physical objects and natural forces. Back-door experience accounts for metaphysical, aesthetic, ethical, and intellectual knowledge (see James, 1890, 2, pp. 638-639). And, as Brennan says, "the natural sciences seem to come from a combination of both types of experiences" (Brennan, 1961, p. 123). Furthermore, James explicitly separates our 'ideals' from the order of sensory experience: "There are then ideal and inward relations amongst the objects of our thought which can in no intelligible sense whatever be interpreted as reproductions of the order of outer experience"

(James, 1890, 2, p. 639). Although James is discussing the means by which the progression of sensations and perceptions of the physical world are organized into meaningful systems within consciousness, he makes it clear that the two modes of experience, while interactive, are differentially developed. The problems that the dualistic psychogenetic model raises for a consistent hierarchical conception of belief can be more easily illustrated if we consider the effects of belief upon action. Belief is necessary for action to proceed. But James, in his discussion of volition basically divides actions into two functional categories (see James, 1890, 2, pp. 522-579). The first is ideo-motor action, largely (as shall be demonstrated below) a product of organized, selected, front-door input. The second category of action is comprised of our 'effortful' volitions, stimulated by 'back-door' generated systems of ethics, aesthetics, and metaphysics. Behaviour, or the tendency to act in definable ways, is thus divided into two sets of conflicting action modes because conflicting patterns of action are demanded within the two frameworks of experience. Beliefs are the necessary precursors of any action, and beliefs will be shown to be categorized or grouped according to the same dualistic model. While consciousness may be structurally unified--back and front door tendencies are both experienced as feelings--the patterning of beliefs may in fact be divided into two 'opposed' sets of feelings. The function of front-door feeling is to adapt the individual to the environment; he grants the objects and relations reality and conforms to their demands. At the same time the individual is under pressure to change the world according to the demands of the conceptual structures that eventually emerge from the inborn back-door tendencies. As Brennan

reminds us, "the significance of a belief lies in the kind of action which it leads to" (Brennan, 1968, p. 87; see also Knox, 1914, p. 68, as Brennan bases his analysis on Knox's). Belief does not consist in the static possession of eternal truths (see Brennan, 1968, p. 87), and the combination of 'Darwinian' and 'Renouvian' constructs in James' theory of reality produces a tension between the functions of consciousness. Beliefs have real and immediate consequences in James' psychology, and the analysis of James' system of realities must take into account the types of action that result from the possession of particular beliefs. Therefore the relationships between the sub-worlds of reality must be carefully studied from a functional perspective.

Huxley defined free will as the lack of restraint in carrying out predetermined desires: "For an agent is free when there is nothing to prevent him from doing that which he desires to do."[6] This materialist concept of freedom is difficult to disprove, once the theorist has allowed any mechanistic explanation of impulses, feelings, or thoughts and the mechanistic elements are fairly strong in James' account of the development of belief in the independent reality of objects (see Kuklick, 1977, p. 168, on the illusion of freedom). James writes that "As far as a large part of our thinking goes, then, it can intelligibly be formulated as a mere lot of habits impressed upon us from without" (James, 1890, 2, p. 632). At the same time, the 'back-door' tendencies which account for ethical judgements are "born in the house" (James, 1890, 2, p. 627). The

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6. Huxley, 1874/1894, pp. 240, 244. Huxley believed that mental conditions were simply symbols of underlying physiological processes.

mind has no conscious awareness of these tendencies but the decision process is influenced by their existence (see James, 1890, 2, p. 627). The back-door tendencies are 'fortuitous' in the sense that they have "no zoological utility" (James, 1890, 2, p. 627). Nevertheless, they definitely have a determinative influence of their own upon conscious selection. The existence of two opposing sets of tendencies means that the efficaciousness of consciousness depends on the tension produced in consciousness between the two sets of tendencies, and the effects of this tension on the mind's interaction with the several worlds of reality.

The Development of Consciousness.

In James' view, the infant's first impressions of the world are of unity, cohensiveness, and conjunction; out of this 'primal unity' the individual separates out particular objects and relations, which are then absolutely believed to exhibit independent reality. The child thus progresses from a monistic apprehension of reality towards a pluralistic awareness of the separateness or individuality of objects and events. John Wild gives a good description of this process:

> From the very beginning, this world is ordered around a hard core of external and internal sensations. These sensations of light, sound, pain, etc., are directed to isolated spatial centers, whose relations are not brought out. They come to us as bald facts which simply occur. We feel them to be real and independent of our desires. While we have them, they are simply there in a naked facticity that we can do nothing to alter. They are never experienced alone, but always as figures on a ground. The first such fact that the child can focus, whatever it may be, is centered on a field of fringes that vaguely encompasses the germs of all that he will ever come to feel and know. His living body is the center of this field, and the two are in constant flux. The living body never returns to a state it was in before, and no condition of the field ever exactly repeats itself. What we call experience is a history in which the desires of the child become purposes, and the

> field becomes more or less organized into a world of things (Wild, 1969, pp. 188-189).

James' concept of selection is related to his proposition that the first impressions of the world are of unity and cohesiveness. Because pure experience is initially perceived as a 'oneness', the individual's task is to break up the 'unity' into the 'many'. He breaks up the 'one' by selecting some objects as more meaningful, interesting, and important than others. He simultaneously works at reconstructing the world and his reconstruction takes the form of allocating selected objects to the various sub-worlds of reality listed above. The reconstruction of reality thus depends on the selections that are made and the classification imposed on the selected objects. The eventual conceptions of reality depend upon the fortuitous interaction between the individual (in a particular physiological state) and the specific conditions of the experiential field at any given moment. The problem is to determine whether the individual has any <u>real</u> choice in making his selections. Because an experience is not initially 'understood' or 'cognized' does not mean that it is without a coercive structure. The belief that objects possess particular qualities comes long before conceptualization develops:

> The child's attention is outwardly directed towards the sources of sensations that appear in the spatial volumes that he hears, and sees, and tastes. They attract his desires, and he believes in their reality with a primitive belief (<u>Urdoksa</u>) that leads him to act and to explore them. This belief remains with him as long as he lives, and underlies everything he later thinks and does, including his most radical questioning of them, even of the belief itself (Wild, 1969, p. 189).

If the child <u>does</u> select his own world, he certainly makes many of the selections or separations of particulars before conception develops: his selections comprise his earliest conceptualizations; they are not the <u>results</u> of conceptualization. The first selections

are made through instinctive and reflexive reaction patterns which are cognitively 'blind'. The situation is quickly reversed as experiences multiply; the individual rapidly forms his first 'conceptions' about the world, and his actions are thereafter elicited by his 'ideas' or 'thoughts' about what the world is like.

The assignment of an object to one sub-world or another is neither random nor arbitrary, nor is the selection of the 'realness' or 'concreteness' of one sub-world over another, for the world of sensory experiences is almost inevitably chosen as the sub-world whose independent reality cannot be denied. Cognitively, the individual makes the discrimination between sensations which are received from other objects and those which he comes to recognize as dreams or fanciful ideas. The first cognitive separations are made between 'real' and 'unreal' events. "It is only as objects become permanent and their relations fixed that discrepancies and contradictions are felt and must be settled in some stable way" (James, 1890, 2, pp. 299-300). But objects are not simply distinguished as 'real' or 'unreal'. Those objects that are selected as 'real' are also 'categorized' as having certain undeniable properties so that the child who is burnt by the candle-flame will invariably conceptualize the candle-flame as hot. Its colour may be of secondary importance. The child who simply observes the candle-flame from a distance may fail to realize that it is hot; his accredition of reality may therefore be given to the observed colour and movement of the flame. The selection of qualities as 'real' depends on experience, and the early, pre-cognitive experiences <u>may</u> influence later selection throughout the hierarchy of belief. Early, or pre-cognitive experience must therefore be taken into account in assessing how 'free' selections are in any of the sub-worlds.

The Problems

The major problem is to determine how much freedom is given to consciousness in the selection of the objects, relations, or postulates which are believed to be real. James writes that the 'popular' mind conceives of the sub-worlds more or less separately, while the 'complete philosopher' seeks to find the proper place for each object of thought in the sub-worlds; at the same time, "he also seeks to determine the relation of each sub-world to the others in the total world which is" (James, 1890, 2, p. 291). The popular mind 'forgets' that the sub-worlds are interrelated when he experiences the objects of one of them; the philosopher does not (see James, 1890, 2, p. 291). James insists that the items of one world may be related to the objects of another. This is important for he is not always consistent in defining the relationship between the sub-worlds in terms of the potentially coercive effect objects from one sub-world may exert on the selection of objects in another.

The problem of selection can be broken down into two major strands; it is first necessary to look at the internal structure of each sub-world and determine what the constraints on selection are. Each sub-world demands a distinct type of affirmation and the assent to the 'reality' of any object is given or withheld in terms of the logical structure of the world it potentially 'belongs' to. It is also necessary to look at the relationship between sub-worlds, to determine whether or not any one sub-world is indeed free of constraint from the other worlds. The sub-world of science (as shall be demonstrated below) is actually a product of the tension created by the different statuses of the 'realities' of the world of sense and the 'realities' of the world of ideal relations. Its objects, therefore, are not independent. At the same time, James tries to maximize

selectivity in the worlds of metaphysics, ethics, and aesthetics--that is, to show that they are free of the constraints that apply to the other sub-worlds. That this is an untenable hypothesis will be briefly shown below, and again in greater detail in the analysis of pragmatic metholology.

The next problem concerns the feasibility of a hierarchical model of belief. The hierarchical structure of selectivity must be balanced against the functional dualism which separates those 'realities' which the individual is coerced into believing in, from those selections which are seemingly uncoerced. The tension between James' 'Darwinianism' and his commitment to Renouvier is felt here in regard to the objects of sense, and the ethical/metaphysical objects. The consistency of the hierarchy is also 'disturbed' by the ambiguous status of the objects of science, as will be demonstrated below.

The 'subjective' character of ideation presents yet another difficulty. While the mind gives assent to the presence of physical objects and relations, it does not mirror the physical world 'as it comes' but reorganizes it into meaningful conceptions so that any particular belief is a combination of objective and subjective factors. Furthermore, James makes it clear that front- and back-door tendencies are not differentially experienced, for they 'appear' in the mind as feelings. But this makes it difficult, at the psychological level, to discover to what extent our beliefs are directly verifiable, and to what extent they depend on processes which underlie conscious experience. The theory of belief must therefore be examined from the perspective of James' attempt to specify the psychological conditions that determine belief in objects as independent entities.

James' theory of reality will be examined with reference to three

of the seven sub-worlds. The worlds of sense, of ideal relations, and of science have been selected because they contain explicit, 'examinable' objects and relations. Furthermore, the problems of hierarchy and the dual function of belief can be examined in terms of the interaction between these three sub-worlds. The four remaining realms--the idols of the tribe, the supernatural worlds, the worlds of individual opinion, and the worlds of madness and vaguery--will not be specifically discussed. Their objects are either too diverse as in the case of the idols of the tribe, wherein James includes religious systems, the 'secondary qualities', and cultural beliefs--or they are too idiosyncratic for a cogent analysis.[7]

The Basic Premises of James' Theory of Reality

In working out some means of assessing the independence of 'real' objects apart from our subjective thoughts about them, James begins with the assertion that "our own reality, that sense of our own life which we at every moment possess, is the ultimate of ultimates for our belief. 'As sure as I exist!'--this is our uttermost warrant for the being of all other things."[8] We cannot help believing in our own independent existence. We then ascribe an almost equal reality to those objects which fulfil our personal needs, and next to the objects which seem to belong to these objects. The sense of reality is given to those objects and relations which are egocentrically connected with outselves. James draws a parallel betwen Descartes'

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7. For a cogent description of the parameters of these latter worlds, see Wild, 1969, pp. 149-151.

8. James, 1890, 2, p. 297; see also James, 1890, 1, p. 289, where James states that each individual makes one fundamental separation between himself and the rest of the universe.

cogito, wherein Descartes derives the existence of the external world from his conviction of the 'reality' of his own sense of self, and his own contention that the ultimate assent to the reality of other things stems from the sense of one's own reality.

There are important differences between James' and Descartes' assertion of the independent reality of other objects and relations. First, declares Descartes, I exist, and secondly I am aware of imperfections and lacks within myself. Descartes contends that awareness of his own imperfection comes from an implicit comparison with something perfect, of which he falls short. He continues his argument by inferring that the source of the standard must exist since he is cognizant of his own imperfection, and he identifies this standard with God. In addition, he perceives a world and if this world does not actually exist he is deceived. He concludes that he is not deceived for deceiving is an imperfection, and God, the source of standards of perfection, can have no imperfections. God therefore does not deceive, and the world exists (see Descartes, 1637/1964, pt. IV, pp. 100-106). Descartes' aim is ontological; he is concerned with the status of objects independent of our relations with them. James is not: the separations he makes in terms of stimulus salience and causal efficacy have psychological and pragmatic implications alone--that is, the separations affect our tendencies to believe and to act. Furthermore, Wild contrasts Descartes' derivation with James', emphasizing that James' concept of self:

> is no soul substance or thinking thing, enclosed within itself. By its cares and concerns, the self reaches out to other independent things and persons. It is intimately and really related to them in many ways. ...This is far from the Cartesian thinking substance. The human person is stretched out into an external world of independent beings, and he knows them in the same manner, and with the same mode of certainty, with which he knows himself (Wild, 1969, p. 154).

In contrast to Descartes therefore, James develops an 'empirical' notion of the self. The self, and the worlds of realities it knows and believes in cannot be defined in an a priori sense, as the physical world of Descartes was defined. The self and the worlds it knows, are the products of the growth of the individual consciousness as it interacts with the physical world. The process wherein an object is accorded reality is an interactive and continuous process.

Psychologically, the mind is constructed so that we are inclined to believe in as much as we can. "The primitive impulse is to affirm immediately the reality of all that is conceived" (James, 1890, 2, p. 319). The primitive impulse of consciousness is towards belief and affirmation, but the object in question must conform to the demands of the 'sub-world' in consciousness at any given time in order to retain credibility. Objects are categorized according to their particular qualities, and in the sensible world, these qualities reside in the objects themselves and are impressed upon the mind from without. More latitude is allowed in the worlds of imagination, so that the imaginary horse "may have wings to its heart's content, so long as it does not pretend to be the real world's horse--that horse is absolutely wingless" (James, 1890, 2, p. 294). The strictures imposed on man, and by man, as to the contents permitted each world, keep them separate in consciousness, so that the individual attends to one world, then another, without any confusion as to the proper objects of each.

We cannot and do not doubt that objects exist externally to ourselves because of the compatibility between our internal sensations and the external objects which present themselves, in space and time conjunctions with the sensations:

The world of living realities as contrasted with

> unrealities is thus anchored in the Ego, considered as an active and emotional term. This is the hook from which the rest dangles, the absolute support. And as from a painted hook it has been said that one can only hang a painted chain, so conversely from a real hook only a real chain can properly be hung. Whatever things have intimate and continuous connection with my life are things of whose reality I cannot doubt. Whatever things fail to establish this connection are things which are practically no better for me than if they existed not at all (James, 1890, 2, pp. 297-298).

The objects which initially have this intimate and continuous connection with our own lives are not selected by us as significant. They become significant because they are presented or appear in conjunction with certain internal sensations we experience (see James, 1890, 2, pp. 299-300, 305). They are thus 'selected' out of the mass of possible objects and relations confronting us because they are in some way compatible with our internal states. Some objects are therefore more interesting, exciting, or stirring than others. The case is simple enough when there is one dominant internal sensation or state of mind, and one external object is presented which satisifes or aggravates that feeling, or 'resembles' the feeling:

> Any relation to our mind at all, in the absence of a stronger relation, suffices to make an object real. The barest appeal to our attention is enough for that. ...take the candle entering the vacant mind. The mind was waiting for just some such object to make its spring upon. It makes the spring and the candle is believed (James, 1890, 2, p. 299).

The child has no reason to doubt the independent reality of the object. And it is important that the candle in James' example is an imaginary candle. James is emphasizing that in the early stages of cognitive development, the possibility of doubt is non-existent; the mind is constructed so that any uncontradicted object simply coerces acceptance of its reality. Doubt, and affirmation of belief require developed conceptualization and volition.

How then, do some objects come to be granted the status of

independent reality? James describes the construction of reality as a kind of 'sorting out' process; initially the mind makes no distinction between hallucinations, perceptions, dreams, and sensibly experienced objects (see James, 1890, 2, p. 299). But these objects contradict each other: they are not all experienced in the same way. The hallucinated candle and the real candle do not make the same impact on consciousness and consciousness is 'coerced' into according the objects that appear before it differential modes of reality. The objects of sensation come to be judged as most real because they coerce the attention; they 'possess' consciousness. James outlines the qualities that an object must possess to maintain itself in consciousness as follows:

> (1) Coerciveness over attention, or the mere power to possess consciousness: then follow--
> (2) Liveliness, or sensible pungency, especially in the way of exciting pleasure or pain;
> (3) Stimulating effect upon the will, i.e., capacity to arouse active impluses, the more instinctive the better;
> (4) Emotional interest, as objects of love, dread, admiration, desire, etc.;
> (5) Congruity with certain favorite forms of contemplation--unity, simplicity, permanence, and the like;
> (6) Independence of other causes, and its own causal importance
> (James, 1890, 2, pp. 299-200).

These categories are not mutually exclusive: James says that "Coerciveness is the result of liveliness or emotional interest" (James, 1890, 2, p. 300). The objects which have the most coercive qualities, which most excite peasure and pain, which most stimulate the will, which hold our emotional interest, are congruent with contemplation, and seem to manifest the most independent existence, are, in the end, the objects of sensation.[9]

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9. (See James, 1890, 2, p. 300). James does not really attempt to justify this particular hierarchy of qualities which describe the 'realness' an object has for the individual. He states that (contd.)

The World of Sense

The sub-world which has the most persistent ability to coerce belief in its independent reality is the physical world that we know through our sensations. James calls it:

> The world of sense, or of physical 'things' as we instinctively apprehend them, with such qualities as heat, color, and sound, and such 'forces' as life, chemical affinity, gravity, electricity, all existing as such within or on the surface of the things (James, 1890, 2, p. 292).

This does not mean that other orders of reality cannot dominate consciousness so that the sensible world is excluded. Conceived objects may well be thought of as more real by particular individuals. The physicist may give a greater degree of reality to molecular vibrations than to sensible objects, and a unique experience may so impress us that all habitual modes of thought are disorganized (see James, 1890, 2, pp. 300-301). In the end, however, the mind returns to the sensible world: "But no mere floating conception, no mere disconnected rarity, ever displaces permanent things from our belief" (James, 1890, 2, p. 301). Given then, that the objects of sensation are accorded the highest status of reality, so that the surest warrant for belief in other sub-worlds is measured against belief in sensory objects (see James, 1890, 2, p. 294), it is necessary to examine exactly what James intends when he makes the world of sense the primary reality. Objects impress themselves on consciousness, but James contended that thoughts or feelings are never totally objective.

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9. (contd.) formal treatments of the problem have already sufficiently occupied philosophers. His own hierarchy is intended to be 'quasi-empirical': it organizes the criteria as he believes most people would do. Furthermore, the characteristics run into each other in experience--for example, lively and interesting objects stimulate the will. He therefore abandons the construction of a formal system at this point and begins his discussion of the sensory world and its coercive power over the mind.

The sensation received from an object is compounded with the subjective feelings about the object. At the same time it is necessary to look at James' concept of reality in terms of the 'determined' aspects of sensation or cognition. While objects do not produce 'copies' of themselves in the mind, they can determine the nature of sensations or feelings or thoughts.

James insists that "among the sensations themselves all are not deemed equally real" (James, 1890, 2, p. 305). Instead:

> The more practically important ones, the more permanent ones, and the more aesthetically apprehensible ones are selected from the mass, to be believed in most of all; the others are degraded to the position of mere signs and suggestions of these (James, 1890, 2, p. 305).

James is actively opposing the passive sensationalism which characterized the older empiricism. The mind is not a passive recipient of impressions, which are then combined according to the laws of association, and all objects do not have the same power to coerce fiats of belief. Those objects which do so embody particular qualities which appeal to the mind. Selection is initially constrained by the construction of the sensory organs so that to be perceived in the first place, the 'qualities' of the object must be compatible with the 'range of the sensory organs'. Objects <u>do</u> have qualities which cannot be perceived; we can perceive violet light rays; we cannot 'see' ultra-violet rays (see James, 1890, 1, p. 284), so that what we will call 'real' depends in part upon the structure of our sensory apparatus. Then, out of the range of perceivable qualities, the mind selects those which seem "worthy of its notice and suppresses all the rest" (James, 1890, 1, p. 285).

The selection process is not completely idiosyncratic nor is it completely dominated by vaguely defined interests. Our senses

reveal two categories of qualities according to James. Tactile, or muscular sensations reveal the primary qualities of objects, while their secondary qualities are experienced through the senses of vision, hearing, and smell. The primary qualities are judged to be the most real because they are: "the least fluctuating. When we get them at all we get them the same. The other qualities fluctuate enormously as our relative position to the object changes"(James, 1890, 2, p. 306).

The primary qualities of the object of sensation include its pain and pleasure producing characteristics, and thus necessarily arise from the tactile relationship between object and organism. The object, as it finds its way into conceptualization, is never that object solely as it exists in the world of pure experience. Added to it are the subjective valuations of the individual as he experiences the object, and the types of experience possible depend not only upon the particular properties of the object itself but upon the physiological structure of the experiencing organism. The dagger is only pain-producing when contact is made with an organism capable of experiencing pain (see James, 1890, 2, p. 306). In marking out the world of pure experience, the individual necessarily adds to the dimensions of that world. The mapping cannot take place without subjective additions to independent objects, and the 'realness' or 'closeness' of any object will be judged in terms of its particular excitatory potential (see James, 1890, 2, p. 307), first according to its pleasure-pain provoking properties (as we are structured to be sensitive to them), and subsequently in terms of its ability to excite the other senses.

These 'other' senses, which experience the secondary qualities,

select from the panoply of sensations so that "the real color of a thing is that one color-sensation which it gives us when most favorably lighted for vision" (James, 1890, 2, p. 305). Our sensory apparatus is such that we come to believe "that we think we see the whole object, tangible, and visible alike, in one simple indivisible act" (James, 1890, 2, p. 77).[10] Thus, perception is a felt combination of the primary tactile sensations and the secondary qualities we perceive through our other sensory organs. James writes:

> Sensational and reproductive brain-processes combined, then, are what give us the content of our perceptions. Every concrete particular material thing is a conflux of sensible qualities, with which we have become acquainted at various times. Some of these qualities, since they are more consonant, interesting, or practically important, we regard as essential constituents of the thing. In a general way, such are the tangible shape, size, mass, etc. Other properties, being more fluctuating, we regard as more or less accidental or inessential. We call the former qualities the reality, the latter its appearances. Thus, I hear a sound, and say 'a horse-car'; but the sound is not the horse-car, it is one of the horse-car's least important manifestations. The real horse-car is a feelable, or at most a feelable and visible thing which in my imagination the sound calls up. So when I get, as now, a brown eye-picture with lines not parallel, and with angles unalike, and call it my big solid rectangular walnut library-table, that picture is not the table. It is not even like the table as the table is for vision, when rightly seen. It is a distorted perspective view of the sides of what I mentally perceive (more or less) in its totality and undistorted shape. The back of the table, its square corners, its size, its heaviness, are features of which I am conscious when I look, almost as I am conscious of its name. The suggestion of the name is of course due to mere custom. But no less is that of the back, the size, weight, squareness, etc. (James, 1890, 2, p. 78).

Secondary qualities come to act as signs of primary qualities.

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10. The shape of an object, as given in vision, is a secondary quality, for shapes are visually apprehended as patches of colour: moreover, shapes take on perspectival distortions when they are perceived visually. This goes against the original formulation of the doctrine, but James is making the primary and secondary qualities distinction into a psychological, rather than an ontological, distinction.

At the same time, primary qualities are instrumental in the selection of secondary qualities through inter-sensory corroboration:

> Reproduced sights and contacts tied together with the present sensation in the unity of a thing with a name, these are the complex objective stuff out of which my actually perceived table is made. Infants must go through a long education of the eye and ear before they can perceive the realities which adults perceive. Every perception is an acquired perception (James, 1890, 2, p. 78).

Perceptions are learned: we call the table square when we see it because it feels square, and we thus select the visual sensation that best corresponds to the tactile sensation when we wish to describe the object.[11] But the depiction of objects through the primary-secondary qualities distinction is confounded by the functional distinctions employed by the perceiver in his apprehension of objects. The psychological use of the primary-secondary qualities distinction allows James to develop a schema for structuring the world of sense. Sensible objects which are, or can be, tangibly felt are accredited with independent existence and have the most coercive power over consciousness. Other properties--the 'sound of the horsecart'--are integral in announcing the tangible presence of the feelable object, but are less important manifestations of its 'realness' than its tangible properties. The functional distinctions employed by the perceiver are grounded in the structural distinctions as the following quotation shows. At the same time, the functional distinctions are less constrained than the structural selections. The essence of any object in conception depends on the use we have for the object at any given time:

> All ways of conceiving a concrete fact, if they are

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11. The analysis of how we come to select 'squareness' as the correct visual description of the table is more complex than is intimated here. See pp. 246-254 for a discussion of the relationship between tactile and visual appearances.

> true ways at all, are equally true ways. There is no property ABOLUTELY essential to any one thing. The same property which figures as the essence of a thing on one occasion becomes a very inessential feature upon another. Now that I am writing, it is essential that I conceive my paper as a surface for inscription. If I failed to do that, I should have to stop my work. But if I wished to light a fire, and no other materials were near by, the essential way of conceiving the paper would be as combustible material; and I need then have no thought of any of its other destinations. It is really all that it is: a combustible, a writing surface, a thin thing, a hydrocarbonaceous thing, a thing eight inches one way and ten another, a thing just one furlong east of a certain stone in my neighbour's field, an American thing, etc., etc., ad infinitum. Whichever one of these aspects of its being I temporarily class it under, makes me unjust to the other aspects. But as I always am classing it under one aspect or another, I am always unjust, always partial, always exclusive. My excuse is necessity--the necessity which my finite and practical nature lays upon me. My thinking is first and last and always for the sake of my doing, and I can only do one thing at a time (James, 1890, 2, p. 333).

Whether I wish to write on the paper, or to start a fire with it, I must first of all believe that the paper exists independently of my idea of it. Furthermore, the properties which make it an appropriate material for writing on or for starting a fire coincide to some degree: its 'thinness'--part of its shape--helps to make it appropriate for both purposes, although thinness is not a necessary property of either writing materials or combustible materials. The primary and secondary qualities indicate that the object is there and that it feels, looks, sounds, tastes or smells in certain ways (all of these senses are not necessary to 'guarantee' the presence of any given object at any given time for the observer of course). It is difficult to determine, therefore, how the primary and secondary qualities act to determine the thinker's intentions towards the object. The relationship between our needs and the properties objects display is based on the selective abilities of the mind, and the ability of the mind to translate perceptual data into modes of

conceiving reality. All thin white surfaces (sheets of plastic, cloth, painted metal) are not appropriate writing material. Thus, cognition is partially dependent upon a knowledge of the primary and secondary qualities--as indicators of the presence of objects with certain qualities--and upon modes of conceptually combining these properties into 'nameable' objects. The primary and secondary qualities do not tell us that the object is a piece of paper until we have learned to correlate certain appearances with certain conceptions or 'names' of objects. This explains why James stresses that all perceptions are acquired perceptions. The primary and secondary qualities are impressed on the child's mind from without, and these impressions consist of repeated combinations of the qualities --for example, thin white objects which he will later perceive as 'sheets of paper'. The mind imposes its own classifications on the combinations of the qualities so that 'named' or 'conceptual' objects emerge, and in the process of acquiring names, objects acquire functions which are given in terms of the thinker's needs. In time, actual thoughts of an object may bear little resemblance to any real particulars of the object and the piece of paper is conceived of as 'a surface for inscription'. But this does not mean that primary and secondary qualities cease to play an active role in cognition once modes of conceiving objects are developed. Primary and secondary qualities continue to provide the essential information about the presence or absence of objects.

The potential of objects to excite fiats of belief depends upon the impact their primary qualities make on the individual--first in terms of their pleasure-pain proclivities, and secondly in terms of other tactile stimuli which are received by the tactile and

'muscular' apparatus. The secondary qualities excite assent as to their reality, first, in terms of their correspondence with primary qualities, and then according to the present needs of the individual. The latitude for belief varies according to these constraints; assent is forced in the cases where the object excites the pain-pleasure feelings--we cannot deny the reality of the dagger that stabs us. And while we may not be able to deny conceptually that paper may equally well be used to start a fire, we can ignore the property of flamability when we wish to write on the paper (see James, 1890, 2, p. 333). The object retains its properties indifferently; our 'appreciation' of the object varies with our interaction with the object. At most, then, the individual can select from the range of restricted possibilities, those properties which he shall call 'real' indicators of the object's presence, and those which he will ignore, or simply take as signs of the object, signs in this sense signifying the presence of other properties that concern him.

The relationship between primary, secondary, and 'essential' characteristics is complex for the 'essential' properties may take their form from primary or secondary qualities. Which properties an individual is compelled to attend to in any given situation depends on the specific nature of the situation. If the individual initially begins to construct his cognitive system by allowing reality to those properties which he cannot ignore--the primary, tactile pain and pleasure provoking qualities of objects--he is eventually free to treat these properties indifferently in his manipulations of the physical world (as far as circumstances permit). He may ignore the primary tactile properties of the dagger if there is no danger of his being stabbed by it. The primary and secondary qualities provide the initial foundations for the structures of cognition and continue

to provide a supportive base for all future cognitions. The qualities that will be attended to in any given situation depend on the active interaction of the individual with real physical objects and events. Thus he can base his interactions with the physical world on primary and secondary qualities indifferently as long as the world cooperates. He may think of the dagger before him in terms of any of its uses, attributes, or appearances until someone picks up the dagger to stab him. Then he is immediately coerced back into attending to the primary characteristics of the object.

James tries to make the distinction between those properties which we can ignore and those which are forced upon the mind by means of a psychological use of the primary and secondary qualities distinction. He does not attempt to use the distinction in the Galiean sense of distinguishing between what is really 'there' in the world, and what exists only when the object interacts with consciousness. Instead, he uses it to distinguish between the degrees of coercion exhibited by objects interacting with mind. But there are elements of the 'older' or 'traditional' usage in James' theory.

Locke makes the distinction between primary and secondary qualities on the basis of those qualities which are inherent in the object itself, and those which "are nothing in the objects themselves but powers to produce various sensations in us by their primary qualities" (Locke, 1690/1964, Bk. 2, VIII, 9, p. 112). The primary qualities are solidity, extension, figure, and mobility; these produce sensations of solidity, extension, figure, motion or rest, and number in the observer. The secondary qualities include colours, tastes, sounds, etc.[12]

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12. (Locke, 1690/1964, Bk. 2, VIII, 9, p. 112). James cites Locke's dictum that pains and pleasures are our primary warrant for ascribing reality to objects. Locke makes it quite clear that these are sensations produced in <u>us</u>. They are secondary effects of the primary (contd.)

The empiricist tradition followed Locke's description, and according to Smith, developed a theory of the 'muscle sense' which was separated from the visual sense in terms of the type of information that could be provided about the physical world. Berkeley thus stated that "we learn the spatial properties of distance, size and form by touching and moving between objects" (Smith, 1970, p. 137). He was followed by Hartley, who asserted that we gained knowledge about the spatial properties of the physical world through the association of sensations received from muscular contractions and pressures(see Smith, 1970, p. 139). Brown went further, and "distinguished the sense of pressure from the sense of bodies (i.e., the primary qualities) which were of two kinds, resisting and extended" (Smith, 1970, p. 143). James Mill concurred. He believed that our ideas of extension and resistance had their genesis in muscular contractions (see Smith, 1970, p. 147). The psychological elements in this viewpoint are obvious, as Smith shows (see Smith, 1970, p. 137). The individual is structured psychologically so that he perceives the distinction between primary and secondary qualities when he examines his own means of knowing the world.

James was well-versed in the traditional notion that the resistance encountered by the muscles was the only means through which the physical world was really known (see James, 1880/1920, p. 213). And he criticized the theory because it implied that free will was only a viable concept if the law of conservation was an 'approximate' description of the 'resistance' between bodies. If the law of conservation was not taken as 'approximate', free will would have to be

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12. (contd.) qualities (see Locke, 1690/1964, Bk. 2, VIII, 17, p. 115; see also James 1890, 2, p. 306). Locke is concerned with distinguishing real, or primary qualities in the Galilean sense, James, with distinguishing them in a psychological sense.

dropped in favour of the supposition that: "the ego, in willing... [is] merely cognitively conscious, in the midst of the universal force-stream, of certain current with which it was mysteriously fated to identify itself" (James, 1880/1920, p. 216). James was unwilling to settle for 'mysterious' indentifications between the will and a universal force and argued:

> To my mind all such discussions rest on an anthropomorphization of outward force, which is to the last degree absurd. Outward forces, so far as they are anything, are masses in certain positions, or in certain movements, and nought besides. The muscular "force-sense" reveals to us nothing but hardness and pressure, which are subjective sensations, like warmth or pain (James, 1880/1920, p. 216).

James implies that all senses are equally important in providing 'primary knowledge' about the world (see James, 1880/1920, p. 213), but his argument lacks consistency, for at times he states that tactile sensations provide the permanent basis for the conceptualization of the properties of objects (see James, 1890, 2, pp. 305-306). At other times he argues that the selection of visual images as to the 'shape' of an object are not random, nor do they depend on the 'experience' of primary qualities:

> We have native and fixed optical space-sensations; but experience leads us to select certain ones from among them to be the exclusive bearers of reality: the rest become mere signs and suggesters of these. The factor of selection, on which we have already laid so much stress, here as elsewhere is the solving word of the enigma (James, 1890, 2, p. 237).

Selection of the 'true' shape of an object is determined by our perception of the object when it and our eyes are:

> in what may be called the normal position. In this position our head is upright and our optic axes either parallel or symmetrically convergent; the plane of the object is perpendicular to the visual plane; and if the object is one containing many lines it is turned so as to make them, as far as possible, either parallel or perpendicular to the visual plane. In this situation it is that we compare all shapes with each other; here every exact measurement and decision is made (James, 1890, 2, p. 239).

When we perceive objects in this spatial relationship to ourselves, "we believe we see the object as it is" (James, 1890, 2, p. 237). As Perry shows, James found a warrant in the writings of Stumpf and Hodgson for his conclusion that "all three dimensions of space are directly sensed, and not constructed or inferred" (Perry, 1935/1974, 2, p. 80). The secondary senses eventually provide information that is as 'true' as the primary or tactile senses provide, and James goes against the empiricist tradition in making the perception independent of tactile experience. At the same time, it is difficult to decide whether James believed that the determination of the 'true' shape of an object was dependent on the interaction--in space--between object and perceiver alone. From a developmental point of view, he stresses that the child's eyes and ears must be 'educated' before he "can perceive the realities which adults perceive" (James, 1890, 2, p. 78).

In 1887 Hodgson wrote to James:

> I have read, and also re-read, your four articles on space, in Mind. I cannot say I am quite convinced that sight alone, without the aid of touch, would ever arrive at discriminating what we call depth from superficial extension. Of course, I understand, and have long thought, that we see extension, indiscriminated into the three dimensions, which are our reasoning way of understanding what we see. We see superficial extension at least, but not defined against or contrasted with the third dimension. In order to discriminate the latter, in order to see things solid, I think we require the aid of touch. However, I am quite open to conviction, and have no philosophical reasons for not welcoming your psychological view of the immediateness of our perception of solids or depth (Hodgson, quoted in Perry, 1935/1974, 2, p. 81).

James finally, according to Perry, decided that the notion of space "is given dimly and then developed and articulated by experience" (Perry, 1935/1974, 2, p. 83). But he conceded that tactile sensations had a role to play: spatial relationships developed so that the individual made immediate judgements in terms of them. In 1888

he wrote to Croome Robertson:

> Lastly, as to your last half-page,--thanks for the concession to the eye! I also concede that in the concrete individual all these experiences come abreast and are inextricably entwined. In a sense the tactile ones are "basal", i.e., we choose them as the reals; but if you have ever seen a blind man (as I have) trying to tell with his fingers which of two angles cut out of paste board is the larger...and compared his slowness and inaccuracy with the instantaneous certainty of the eye dealing with the same objects, I don't see how you can doubt the entire independence of our eye-space-measurements of those of touch (James, quoted in Perry, 1935/1974, 2, p. 86).

The selection of 'secondary' effects is constrained by the 'primary' effects of objects, and by 'learned modes of perceiving', so that James has partly given in to the arguments of traditional empiricism. This conclusion is strengthened by the fact that James really believed (at this point in his career) that secondary qualities were effects produced in the mind by the primary qualities (see James, 1890, 2, p. 671). But James deviates dramatically from the empiricist tradition when he includes the pain and pleasure producing properties of objects as primary qualities. He writes:

> Then, more decisive still, the tactile properties are those most intimately connected with our weal or woe. A dagger hurts us only when in contact with our skin, a poison only when we take it into our mouths, and we can only use an object for our advantage when we have it in our muscular control. It is as tangibles, then, that things concern us most; and the other senses, so far as their practical use goes, do but warn us of what tangible things to expect. They are but organs of anticipatory touch, as Berkeley has with perfect clearness explained (James, 1890, 2, p. 306; see also James, 1880/1920, p. 216).

Pleasure and pain are subjective categories of experience. If objects are capable of producing these effects in organisms, they must, in terms of the original primary and secondary qualities distinction, produce the effects in the same way that they produce the secondary qualities. So why, then, does James deviate from the established tradition, and discuss the pleasure-pain effects of objects under the

heading of primary qualities? He gives the answer in "The feeling of effort" when he states that 'hardness' and 'pressure' are subjectively experienced as are pleasure and pain (see James, 1880/1920, p. 216). It is impossible, given James' construction of 'thoughts' as unitary, single events that primary qualities could be 'known' or 'experienced' in any totally objective sense.

James was concerned with the establishment of an evolutionary psychology. That is, he was concerned with cognition as an 'adaptive' function of the mind. Therefore, he is concerned with the impact physical objects make on the organism. The fact that the dagger produces pain--that we are constructed so that we cannot help feeling pain, and that this pain is experienced through the tactile senses--qualifies the pain-pleasure effects of objects as primary qualities in James' epistemology. He is concerned with making the distinction between primary and secondary qualities on the basis of how objects feel to us. Thus, vision, hearing, and smell are senses which mediate information about what the object would feel like should we come into contact with it.

James is making the distinction between primary and secondary qualities on the basis of the consequences that accrue to the individual in his interaction with the physical world. Human experience is at the centre of James' epistemology. He is not concerned with determining the physical characteristics of objects in an absolute, philosophical sense. Rather, he is concerned with deriving parameters for determining whether or not physical reality possesses any definable characteristics which can make an impact on the individual. If the individual is to survive, he must know the difference between physical objects and thoughts about objects--and this difference, according to James, is learned through experience. And it is learned

through the separation of those feelings which include sensations of pleasure or pain (or less dramatically, other tactile sensations) and those which do not. The visual sense is initially unreliable--the child makes no distinction between the reality of the candle he hallucinates and the candle he 'sees'. Were the individual to be totally isolated from physical reality so that he simply watched the parade of objects passing before him, but never came into physical contact with them, he would presumably remain uncertain of the distinction between those things that had an independent physical reality of their own, and those which were the products of his imagination. In the end, then, there is no way of distinguishing between 'real' and 'unreal' objects, apart from the 'felt' sensations that the first category provides, and the second does not.[13] We give independent reality to those things we can feel, or potentially feel, and deny it to those we cannot. The senses of sight, hearing, and smell give information that serves as 'signs' of the presence of real objects. As cognition develops, the individual comes to recognize visual and tactile representations as equivalent means of knowledge (see James, 1890, 2, p. 78). 'Seeing' the table is sufficient for the subject to infer that the table will yield certain predictable tactile sensations should he come into physical contact with it.

This analysis leads to two conclusions--1) that there is a world of physical objects, independent of ourselves, and 2) that we are structured so that we cannot avoid 'feeling' or 'experiencing' at least some of these objects. There is, at some level, a determinative

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13. Even this distinction is not universal or infallible. Altered states of consciousness can provoke distortions of the 'ordinary' distinctions between mental and physical objects. See for example, James' account of hypnotic states (James, 1890, 2, pp. 593-616).

relationship between the self and the physical world. This determinative relationship between the self and the physical world can best be expressed by the psychological version of the primary and secondary qualities distinction: primary qualities are those with the greatest sensible coerciveness and hence, in the evolutionary history of the race, those most relevant to the organism's adaptation and survival. Any quality--primary or secondary--may be selected by the individual as essential for his particular purpose, providing that the specific situation warrants such wide selectivity. That is, the individual can only regard the primary, tactile, pain-producing potential of the dagger as a non-essential characteristic when he is in no danger of being stabbed with the dagger. James can go no farther in deriving a realist basis for his epistemology. Given that the mind is coerced into believing in the independence of the physical world, then, can consciousness truly be said to be efficacious in regard to the selective process that is responsible for conceptions of the physical world? This is probably the most difficult question to answer in any analysis of James' epistemology. Certainly he intended that the question be given a positive answer --the problem is whether or not his construction of mind and its relationships with the physical world supports this conclusion.

In the examination of James' theory of interests it was concluded that the interest hypothesis did not guarantee an efficacious consciousness. Given that the organism has a positive interest or instinct that predisposes it to struggle to survive, it is logical to conclude that the organism cannot help behaving in such a way so as to maximize its survival. In this sense, Huxley's automaton model 'explains' survival as well as James' insistence that

consciousness is efficacious. James' insistence that the primary qualities of objects are the pleasure-pain producing effects accords better with a deterministic acccount of adaptation, than with the view that survival depends on the possession of an efficacious consciousness.

James makes it clear that the selection process is not entirely free of external constraints: the distinction between what can be willed and what must be believed is a physiological, not a psychological question (see Kuklick, 1977, pp. 166-168):

> Nature cannot change the past to suit our thinking. She cannot change the stars or the winds; but she does change our bodies to suit our thinking, and through their intrumentality change much besides; so the great practical distinction between objects which we may will or unwill, and objects which we can merely believe or disbelieve, grows up, and is of course one of the most important distinctions in the world. Its roots, however, do not lie in psychology, but in physiology; as the chapter on Volition will abundantly make plain. Will and Belief, in short, meaning a certain relation between objects and the Self, are two names for one and the same PSYCHOLOGICAL phenomenon. All the questions which arise concerning one are questions which arise concerning the other. The causes and conditions of the peculiar relation must be the same in both. The free-will question arises as regards belief. If our wills are indeterminate, so must our beliefs be, etc. (James, 1890, 2, p. 321).

The problem is further compounded when James asserts that we may feel that an act, or selection has been freely made but the feeling of freedom may be illusory:

> But, on the other hand, there is the certainty that all his effortless volitions are resultants of interests and associations whose strength and sequence are mechanically determined by the structure of that physical mass, his brain; and the general continuity of things and the monistic conception of the world may lead one irresistibly to postulate that a little fact like effort can form no real exception to the overwhelming reign of deterministic law. Even in effortless volition we have the consciousness of the alternative being also possible. This is surely a delusion here; why is it not a delusion everywhere?(James, 1890, 2, p. 572).

James appears to be incorporating a double-sided view of

consciousness into his theory of belief and action. Consciousness is efficacious to the extent that we can say 'let this be a reality'. At the same time the fiat of reality is coerced in relation to certain objects and their effects on the mind. Mind would seem to have two distinct functions; it must accept the coercive nature of certain qualities, so that conceptualization is in part determined. It is also free to accept or reject others, and at all times it 'experiences' objects according to the particular 'content' of the stream of consciousness at any given moment, so that conception is in part the creation of the individual. Those qualities which must be accepted are those which come, or can come potentially into direct contact with the body so that the mind-body dualism is substantiated by the primary and secondary qualities distinction. Physiological structures force the individual to grant reality to objects in terms of certain of their properties. It is the 'sharpness' of the dagger that gives it its pain-producing characteristics, and 'sharpness' describes the primary qualities of the object in the traditional sense--it is sharp because it is shaped in a certain way and has a determinable degree of hardness. Its particular colour is irrelevant in demanding assent to its independent reality, but colour provides information about the nature of the object's primary qualities--it serves as a real indicator of them. The point is that we can separate the world of concrete realities into two categories in terms of James' particular use of the distinction between primary and secondary qualities. Those sensations which are 'felt' in a tactile sense indicate the presence of an independent object. Those sensations which are at some remove from the body, or cannot come into contact with the body, may, or may not, indicate the presence of a real object. These sensations are sorted into signs of real objects, so that the individual soon

recognizes the presence of objects when he sees or hears them and the secondary sensations come to serve the function of primary indicators of objects.

The 'secondary' sensations give a more fleeting, changing, 'chaotic' picture of reality James describes at length how these sensations are sorted out by the mind, so that the individual selects one shade to 'stand for' the colour of the object. Thus he comes to think that the object really is that colour--that sensations are repeating themselves, whereas in fact he has merely learned to select, from an always subtly different range of phenomenal presentations, those which seem to be most permanent, most unchanging (see James, 1890, 1, p. 231).

It is within the possibilities for selection given in the secondary sensations that consciousness may be least constrained. In the world of physical reality the secondary selections are constrained by the primary selections. But this constraint is not all-pervasive. The selections we make from the world of sensation are chosen in accordance with postulates, schematas, or conceptions which belong to other sub-worlds of reality (see James, 1890, 2, pp. 286-287).

The 'parameters' or qualities of the physical world exert an influence over what it is possible for the individual to 'believe' about the contents of the other sub-worlds of reality. These qualities are not, however, always the same qualities that coerced belief at the sensory level. Nor do they place the same kind of restraints on what can be accepted as true in the other sub-worlds. The other sub-worlds of reality exist on an 'extra-physical' plane--that is, they depend on mind for their realization. Certainly, in Jamesian terms, the physical world requires consciousness if it is to be known. It does not, however, appear to require consciousness to

exist. In allowing that objects have the power to coerce consciousness into an assertion of their independence, James goes as far as it is possible to go in asserting the independent existence of the physical world. Beyond this, he takes care to show that the natural order of reality has little in common with human conceptions of order (see James, 1890, 2, pp. 634-635). Although the other sub-worlds depend on the existence of the physical world to a greater or lesser extent, depending on their position in the hierarchy of belief, it will be shown that their postulates are derived from the structure of consciousness itself.

The World of Ideal Relations

While sensible objects impress the mind from without, so that their realness is affirmed through the means of the senses, James claims that there is another order of reality which impresses its truths from within. The ideal relations are generated by the back-door processes: the mind is structured so that it organizes experience into various logical, mathematical, aesthetic, metaphysical, scientific, and ethical systems. Out of this organization emerges: "The world of ideal relations, or abstract truths believed or believable by all, and expressed in logical, mathematical, metaphysical, ethical, or aesthetic propositions (James, 1890, 2, p. 292).

James finds little in the world of sensory experience to correlate with our abilities for comparison as it exhibits itself in classification, logic, and mathematics--the 'pure sciences'.[14] These are

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14. See James, 1890, 2, pp. 641-642, where he sharply limits the amount of sensational experience necessary for the generation of the ideal relations.

separated from the natural sciences because their truths are self-contained, and they do not rely on congruency with the external world to maintain our belief in the consistency of their relations. They are 'self-validating' propositions, and they are related to the sensible world as follows:

> [The world of ideal relations] is a very peculiar world, and plays right into logic's hands. Some of the things, at least, which it contains are of the same kind as other things; some of them remain always of the kind of which they once were; and some of the properties of them cohere indissolubly and are always found together. Which things these latter things are we learn by experience in the strict sense of the word, and the results of the experience are embodied in 'empirical propositions'. Whenever such a thing is met with by us now, our sagacity notes it to be of a certain kind; our learning immediately recalls that kind's kind, and then that kind's kind, and so on, so that a moment's thinking may make us aware that the thing is of a kind so remote that we could never have directly perceived the connection. The flight to this last kind over the heads of intermediaries is the essential feature of the intellectual operation here. Evidently it is a pure outcome of our sense for apprehending serial increase; and, unlike the several propositions themselves which make up the series (and which may all be empirical), it has nothing to do with the time- and space-order in which the things have been experiences (James, 1890, 2, p. 652).

The external world correlates, or is congruent, with some of the basic comparisons, and experience thus shows us that the comparison of these systems with sensible objects is possible, but unnecessary to sustain the systems. The main impetus for ordering experience into logical, classificatory and mathematical terms stems from our own unique, brain-born mental predisposition: "Classification, logic, and mathematics all result, then, from the mere play of the mind comparing its conceptions" (James, 1890, 2, p. 659). The result of this is that:

> the mind is filled with necessary and eternal relations which it finds between certain of its conceptions, and which form a determinate system, independent of the order of frequency in which experience may have associated the conception's originals in time and space (James, 1890, 2, p. 661).

Although James shows quite clearly that these eternal verities have nothing to say about what we can find in the world--about facts per se--they do relate in specific ways to the 'real' structure of the physical world. If we find the particular objects in the world, the eternal truths must and will obtain of them (see James, 1890, 2, p. 663). The eternal verities have a secondary relationship to the real world as they are derived and as they are applied.

But even though this secondary relationship obtains, it is not immediately relevant to their primary status as ideal constructs:

> The eternal verities which the very structure of our mind lays hold of do not necessarily themselves lay hold on extra-mental beings, nor have they, as Kant pretended later, a legislating character even for all possible experience. They are primarily interesting only as subjective facts. They stand waiting in the mind, forming a beautiful ideal network; and the most we can say is that we hope to discover realities over which the network may be flung so that ideal and real may coincide (James, 1890, 2, pp. 664-665).

The conceptual map is sufficient for purposes of study; its eternal truths need to be acknowledged whether the world of sense exists or not (see James, 1911, p. 74). As conceptualization develops, the links between mind and world become more and more tenuous until a distinct 'dualism' of the contents of both results. We 'believe' in the ideal relations because their inner consistency as conceptual systems compels belief. In this way, systems of ideal relations, taken without reference to external objects, compel our assent to their objects in the same way as we are compelled to believe in the objects of our senses. We now have two worlds of irrefutable objects: one sensible, and one ideal.

James includes logical and mathematical systems in the same sub-world with metaphysical, aesthetic, and ethical postulates because both 'categories' have the same psychogenetic origin and none of these postulates rely on 'front-door' experience for their

internal verifiability. The postulates of these systems can only be contradicted by other postulates within the same systems; their truth or falsity has nothing to do with the physical world. But they do have implications for human cognition of, and interaction with, the physical world. This is not due to their psychogenetic origin, or their internal consistencies as systems, but rather to the place James accords scientific objects in his analysis of the worlds of reality. Therefore logical and mathematical theories must be considered in relation to the objects of science, which constitute the second sub-world of reality, while aesthetic, metaphysical, and ethical postulates must be reconsidered below in regard to James' famous 'will to believe'. The functions of the necessary truths, if not their evolution, vary according to James' notion of what we can and cannot help believing about the physical world.

The World of Science and the 'Common Assumptions' of the late Nineteenth Century

James describes the world of scientific objects and relations as follows:

> The world of science, or of physical things as the learned conceive them, with secondary qualities and 'forces' (in the popular sense) excluded, and nothing real but solids and fluids and their 'laws' (i.e., customs) of motion. ...
> I define the scientific universe here in the radical mechanical way. Practically, it is oftener thought of in a mongrel way and resembles in more points the popular physical world (James, 1890, 2, p. 292).

James distinguishes conceptions of science from conceptions about physical objects as they are 'instinctively apprehended'. Scientific objects must be distinguished from sensible objects because scientific descriptions of the physical world are as foreign to the immediate apprehension of objects as are the logical, mathe-

matical, metaphysical, ethical and aesthetic propositions, grouped together in the third category of 'ideal relations or abstract truths believed or believable by all'. There is nothing in sensible experience to coerce a 'scientific' perspective of the world:

> The most persistent outer relations which science believes in are never matters of experience at all, but have to be disengaged from under experience by a process of eliminating, that is, by ignoring conditions which are always present. The elementary laws of mechanics, physics, and chemistry are all of this sort. The principle of uniformity in nature is of this sort; it has to be sought under and in spite of the most rebellious appearances; and our conviction of its truth is far more like a religious faith than like assent to a demonstration (James, 1890, 2, pp. 636-637).

Science is distinguished from the category of ideal relations because scientific theories are commonly conceived of as describing the physical world as it really is, while those occupations--mathematics, logic, ethics, metaphysics and aesthetics--included in the category of ideal relations 'exist' as independent conceptual worlds (see James, 1890, 2, p. 663). The development of scientific laws, however, occurs under the same conditions as those which elicit the ideal relations: "Every scientific conception" writes James, "is in the first instance a 'spontaneous variation' in some one's brain" (James, 1890, 2, p. 636). But science must also coincide with the 'empirical truths' gleaned from experience--"that heat melts ice, that salt preserves meat" (James, 1890, 2, p. 637). At the same time, the scientific truths:

> arise in the mind in no such passive associative way as that in which the simpler truths arise. Even those experiences which are used to prove a scientific truth are for the most part artificial experiences of the laboratory gained after the truth itself has been conjectured. Instead of experiences engendering the 'inner relations', the inner relations are what engender the experiences here (James, 1890, 2, p. 638).

The relationship between science and the world would appear to demand that the 'front-door' truths would have an immediate influence

on the genesis of scientific theories. But scientific theories do not replicate the space- and time-relationships perceived immediately between objects (see James, 1890, 2, p. 632); they need only be "congruent with the time- and space-relations which our impressions affect" (James, 1890, 2, p. 640). This congruency is precisely what is achieved in 'successful' scientific theories. James does not reject front-door experience as providing the material for scientific theories; instead he argues that it does not provide an adequate time- and space-sequence for the construction of scientific theories:

> What happens in the brain after experience has done its utmost is what happens in every material mass which has been fashioned by an outward force,--in every pudding or mortar, for example, which I may make with my hands. The fashioning from without brings the elements into collocations which set new internal forces free to exert their effects in turn. And the random irradiations and resettlements of our ideas, which supervene upon experience, and constitute our free mental play, are due entirely to these secondary internal processes, which vary enormously from brain to brain, even though the brains be exposed to exactly the same 'outer relations'. The higher thought-processes owe their being to causes which correspond far more to the sourings and fermentations of dough, the setting of mortar, or the subsidence of sediments in mixtures, than to the manipulations by which these physical aggregates came to be compounded (James, 1890, 2, p. 638).

Scientific theories are 'brain-born'--they result from the mind playing with, and selecting from, the data which constitutes its conceptions of reality. James claims that secondary brain processes impose a unique order upon the time-space relations gleaned from experience. Thus 'belief' in scientific objects must be studied from two perspectives: in the first instance, we 'believe' in the movements and relations between objects in the same way as we 'believe' in the physical objects themselves--we believe that objects fall down, that heat melts ice, etc., in the same way that we believe in the objects and the ice (see James, 1890, 2, p. 637). But our belief in the scientific principles that correlate with these

events--the laws of gravity and thermodynamics--is another matter entirely: as James shows, they 'conceptualize' our experience but are not of our experience (see James, 1890, 2, p. 638, quoted above, p. 262). The fact that scientific postulates of this sort harmonize with experience gives them more power to excite belief than if such harmony were non-existent. The particular structure of the mind impels the reorganization of experience into patterns and laws congruent not only with the experience itself, but with particular mental predispositions.

This conception of science is dependent on an 'in-built' plasticity in a consciousness which interacts with a plastic environment. The external world must be capable of receiving the mould into which human conception casts it, if the criteria of empirical verification are to be met(see James, 1890, 2, p. 652). James' dictum that we believe as much as we possibly can believe is consistent with his theory that the thinker continually attempts to verify conception in perception. Conceptions must be verified by perceptions if we are to discover whether the new 'scientific' ordering of experience is congruent with sensible experience (see James, 1890, 2, p. 652). If such congruency obtains, we 'believe' in the scientific theory. This, then, is basically the relationship between sensory experience and the ideal relations when both become embedded in scientific theories. But James' construction of the relationship is problematic when it is considered in conjunction with his construction of the stream of consciousness.

James' isolation of a 'scientific' world of primary qualities and the laws of motion is the most interesting aspect of his theory of belief. The discussion of James' construction of consciousness

focused on James' reaction against the traditional empiricist theories of mind, and his attempt to create a new concept of consciousness based on evolutionary principles. James gave the primary and secondary qualities distinction a new evolutionary focus when he converted it from an ontological into a psychological distinction. But his psychological revision retained the basic division of the older form of the distinction--primary qualities, or tactile sensations, were the qualities that showed the least fluctuation--they were the most undeniably real. James' definition of scientific objects confirms his ratification of the primary and secondary qualities distinction. It was stated (see Chap. 1, p. 102), that James developed a new evolutionary concept of mind and that these mental structures were eventually applied to the reconstruction of the physical world in his later philosophy. The physical world, however, retained its pre-evolutionary structure in the Principles. James' construction of the world of science is perhaps the best evidence that the Principles is both radical and conservative--that 'parts' of the old Newtonian world-view are ratified, while the basis for a new empiricism is built into the restructuring of consciousness.

James really believed in the efficacy of the mathematical/mechanical structure that had been derived for the physical world within the context of Newtonian science. The dualism between mind and body logically extends into a mind-matter dualism, and this dualism is intensified in James' writings by the qualitatively different structures given to mind and body or matter. In the older empiricism, mind and matter were structured along parallel lines--the structure of matter was reflected in the elementaristic 'ideas', and physical laws were 'translated' into the laws of association. Mind and physical reality were constructed so that mind 'knew' the world.

James' mind is not so constructed, and the exact nature of scientific knowledge therefore becomes problematic.

James' definition of what is included in the sub-world of science is not problematic--he simply follows traditional Newtonian conceptions of the world. But the problem of how these 'scientific objects' are known, and moreover, believed to be 'real', believed to coerce consciousness in regard to their 'realness', is problematic. Wild writes that the secondary qualities:

> are dismissed as the effects of scientific causes and, therefore as appearances. In this way, they are "reduced to relative unreality when their causes come to view", though these same appearances are "the things on which our knowledge of the causes rests". But how can a delusion conduct us to the truth? James' comment on this paradoxical situation is interesting, and shows how deeply he felt the need for a more adequate phenomenology which would do justice to diverse perspectives (Wild, 1969; internal quotation from James, 1890, 2, p. 301).

Wild is referring to James' comment that "the appearance needs the reality in order to exist, but the reality needs the appearance in order to be known" (James, 1890, 2, p. 301). The statement may appear paradoxical in modern philosophical terms, and it may be true that James later came to feel the need of a phenomenological framework for his epistemology because of this apparent paradox (James' relationship with phenomenology is discussed in Chap. 8). But a less paradoxical and more satisfactory explanation of James' position in the Principles can perhaps be given in terms of James' acceptance of some of the late nineteenth century common assumptions about the nature of the physical world--in particular, the mathematical and mechanical assumptions, and the distinction between primary and secondary qualities.

The mathematical and logical systems which conceptually determine the progress of scientific discovery belong to the world of

ideal relations. Their believability is not an empirical affair; the fiat for their reality comes from their logical consistency with one another--to the mind that 'knows' them, they are true, and their objects and relations are real. But they are not real in any physical sense. Therefore the function of science is to bring together the ideal and the physical worlds. Science grows out of the tension between the two indisputably real sub-worlds of reality. It describes physical events, but it does so in terms of abstract or ideal systems. Scientific objects are therefore both subjective (in the sense that they owe part of their form to the rational system of ideal relations), and objective. So far, the psychological dynamics are simple enough. If the mind can locate the object it thinks about in the physical world, the mind will be satisfied that the object exists. But scientific objects, according to James' definition, are not that easily located. Thus the criteria James uses to come to the conclusion that they are 'believed or believable by everyone' must be examined.

White remarks that "It is clear that James thought that the discovery that Newtonian particles exist in outer reality is an empirical affair" (White, 1973, p. 178). White is discussing the following statement by James:

> Science thinks she has discovered the objective realities in question. Atoms and ether, with no properties but masses and velocities expressible by numbers, and paths expressible by analytic formulas, these at last are things over which the mathematico-logical network may be flung. ...Sensible phenomena are pure delusions for the mechanical philosophy. The 'things' and qualities we instinctively believe in do not exist. The only realities are swarming solids in everlasting motion, undulatory or continued, whose expressionless and meaningless changes of position form the history of the world, and are deducible from initial collocations and habits of movement hypothetically assumed (James, 1890, 2, p. 665).

This statement certainly indicates that James really believed that

the outer world was made up of Newtonian particles. But how had James arrived at this belief? If the statement is taken at face value we have grounds for claiming that James accepted the standard Newtonian view of science as it applied to the construction of the physical world and that his construction of consciousness and his construction of the physical world were radically different. Unfortunately the situation is far more complex than this,and the answer depends on the status of the concept of 'atoms' in James' theory. If James believed in Newtonian particles, he also indicated that knowledge of the atoms and their movements was hypothetically deduced so that the notion that matter is composed of atoms must therefore be taken as a fundamental theoretical construct within the broad mechanical/mathematical paradigm of Newtonian theory. That paradigm, like all scientific paradigms, according to James, had its genesis in the sub-world of ideal relations and necessary truths, which provides both the hypothetical constructs and their particular organization into scientific theories, and in the empirical relations that are observed between events of the order of heat melts ice, that salt preserves meat etc. (see James, 1890, 2, p. 637). The cohesions that are observed in the sensible world are only "proximate laws of nature" (James, 1890, 2, p. 637), and as such do not constitute a scientific view of the sensible world. The laws derived within science must not contradict the proximate laws of nature, but scientific laws are not simple abstract formulations of the proximate laws of nature. Instead, they constitute a set of rules which describe, or attempt to describe, the relations between <u>selected</u> observed cohesions in the sensible world. Furthermore, scientific laws are generated in spite of the contradictory appearances of sensible phenomena, so that James likens belief in

the truth of mechanical laws to religious faith (see James, 1890, 2, pp. 636-637, quoted above, p. 262).

What would it mean, then, to say that the discovery that Newtonian particles exist in outer reality is really an empirical affair? In James' terms, the verification of an idea consists in finding a sensible object that corresponds to the idea. Thus, the verification of any idea depends on making a search in the sensible world for a corresponding object. But then we have to ask what properties the object must have, or how it must be presented to the observer in order to qualify as a verification of the idea in the mind of the observer. And this remained a troublesome epistemological problem for James (see Chap. 3, pp. 193-196, and Chap. 7, pp. 496-507). The search for Newtonian particles is initiated according to James, under the rebellious appearances of objects in the perceptual display (see James, 1890, 2, pp. 636-637, quoted above, p. 262).

The confirmation that the outer world is made up of Newtonian particles can, in James' terms, go no farther than the congruity of appearances with the whole corpus of Newtonian theory. The atomic theorist looks for confirmation of his theory in the observable behaviour of objects--that is, out of the perceptual array he selects those events which indicate that objects exhibit the properties they do because they are composed of Newtonian particles. The discovery that Newtonian particles exist in outer reality is only an empirical affair in the sense that the sensible world is searched for phenomenal manifestations that indicate that objects would only behave in this way or that if they were composed of Newtonian particles. If enough phenomenal evidence of this sort is amassed, the theorist believes that his theory is true.[15] And the products of

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15. The problem of underlying causes is taken up again in Chap. 9.

this correspondence between sensible phenomena and the propositions generated within the framework of necessary truth and ideal relations--that is, the scientific object--has a fairly strong coercive power over the mind. The scientific object is the product that is generated when postulates and experiences from the two sub-worlds whose 'reality' cannot be denied by the mind are used together to generate a third type of object. The objects of science are not directly locatable in either sub-world so that their power to coerce belief is somewhat less than that of objects of the sensible or ideal worlds. But their coercive powers are still fairly strong. Thus, James' belief that the discovery of Newtonian particles was an empirical affair is subject to the conditions restricting verification outlined above.

On the other hand, James <u>believed</u> that sufficient empirical evidence of this sort had been amassed to substantiate the theory that objects were composed of Newtonian particles. He had a progressive view of science: he believed that the universe was growing more orderly, more rational, to the human mind (see James, 1890, 2, p. 669):

> The modern mechanico-physical philosophy of which we are all so proud, because it includes the nebular cosmogony, the conservation of energy, the kinetic theory of heat and gases, etc., etc., begins by saying that the <u>only</u> facts are collocations and motions of primordial <u>solids</u>, and the only laws the changes of motion which changes in collocation bring (James, 1890, 2, p. 667).

and, further on:

> So we seek, and seek; and in the molecular systems we find a sort of inward belonging in the notion of identity of matter with change of collocation. Perhaps by still seeking we may find other sorts of inward belonging, even between the molecules and those 'secondary qualities', etc., which they produce upon our minds.
>
> It cannot be too often repeated that the triumphant application of any one of our ideal systems of rational

> relations to the real world justifies our hope that other systems may be found also applicable. Metaphysics should take heart from the example of physics, simply confessing that hers is the longer task (James, 1890, 2, p. 671).

James, like Huxley and Tyndall before him, cannot resist charting the progress of science. He seems certain that progress will continue in an unbroken sequence, so that metaphysical axioms will eventually find substantive objects in the physical world. This concept of progress, as much as any other consideration, is what allows James to group metaphysical axioms along with mathematical and mechanical postulates. At the time he wrote the Principles, it seems clear that James really believed that the nineteenth century common assumptions about the nature of the physical world were true: the physical world could be mathematically and mechanically described, it was composed of atoms, it exhibited the primary and secondary qualities, and the relationships between atoms could be described by 'laws' of motion. This is important, given that James disputed the validity of the analogous common assumptions in regard to the structure of the mind.

James' statement that the objects of science are believed or believable must still be examined more comprehensively to determine what it is about scientific objects that makes them real. Certainly they are not believed to be 'real' in the same way that the objects of sensation are, because the apprehension of their qualities is initially inspired by the ideal relations generated by the mind and James takes care to make this clear. Thus, the nature of the ideal relations is instrumental in determining the nature of the qualities which will be sought in the physical world, and which, if found, will be 'realized' as scientific objects.

White states that James usually claims that "some principles are necessary and immutable" (White, 1973, p. 177), while insisting

at other times that "there is no such thing as a principle of natural science of this kind" (White, 1973, p. 177). And in some places in the Principles he comes close to combining the two positions and arguing that "the wave-theory of light and theories of pure mathematics are alike not only in being 'spontaneous variations' but also in being 'rational propositions'" (White, 1973, p. 177, see also James, 1890, 2, p. 669).

James' commitment to evolutionary theory and his even stronger commitment to an efficacious model of consciousness resulted in his theory that the ideal relations and necessary truths originally had their genesis as spontaneous variations in the mind. At the same time, the large body of logical propositions generated within the framework of the necessary truths--and the logical irrefutability of the necessary truths themselves--seemed to have a 'truth value' which somehow transcended their spontaneous or fortuitous origins. In other words, James at times inclined towards rationalism in his presentation of the necessary truths, and in his presentation of the logical propositions and scientific theories that were generated from them. Several problems emerge from James' confusion here: granting that the necessary truths gradually evolved as the mind evolved, through the fortuitous process of spontaneous variation (see James, 1890, 2, pp. 618, 627-628, 631, 636, 641), the necessary truths and ideal relations have since achieved a 'truth' status (for James) that supervenes their natural, fortuitous origins. The truth of the rational propositions must be conceded by any individual who attends to them. They are rational propositions in the sense that their truth can only be questioned from inside the rational system (rational propositions can only be nullified by other

rational propositions), they are not subject to empirical verification, and their truth values are consistently immutable. The truth of the propositions, 2 + 2 = 4, is self-verifying within the mathematical system: it is not contingent upon outside circumstances. The proposition that the necessary truths transcend their origins so that a static, immutable, system of self-verifying propositions is generated is problematic, given James' commitment to the premise that the necessary truths arose in the first place as spontaneous variations in the mind. If the necessary truths originated as spontaneous variations in the mind, it is logical to assume that these truths could potentially be modified or replaced by other spontaneous variations through the continued evolution of the mind interacting with the physical world. Thus, James' rationalistic approach to the status of the necessary truths and the ideal relations conflicts with his commitment to evolution.[16]

While necessary truths are self-verifying within their systems, we have established that according to James, scientific truths are contingent upon the discovery of confirmatory appearances in the sensible world. And when James emphasizes the 'fallibility' of scientific theories, he also emphasizes their spontaneous origins:

> Every scientific conception is in the first instance a 'spontaneous variation' in some one's brain. For one that proves useful and applicable there are a thousand that perish through their worthlessness. ...the 'scientific' conceptions must prove their worth by being 'verified'. This test...is the cause of their preservation, not that of their production (James, 1890, 2, p. 636).

In this mode, the necessary truths act as permanent constructs in the mind--the mind is structured so that it compares, classifies, and makes

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16. This problem is taken up in more detail in Chaps. 7 and 9.

logical inferences and mathematical judgements (see James, 1890, 2, pp. 644-665). The necessary truths and ideal relations emerge from these propensities of mind and form self-verifying systems. The nature of the self-verifying systems seemingly results from the structure of mind as it has evolved over time. But the ideal relations and necessary truths facilitate the generation of propositions which purport to rationalize sensible experience--in this case, scientific hypotheses. A spontaneous variation, in this sense, is a proposition which depends upon the body of necessary truth for its terms, but which is not a necessary outcome of the mind's facility for comparing concepts. The problem here is whether scientific hypotheses are treated as spontaneous outcomes of the play between ideas in the mind and the desire to rationalize sensible experience (see James, 1890, 2, p. 636), so that they require verification in the sensible world (because they are fallible), or whether scientific theories are logical extensions of the necessary truths and stand as rational propositions in their own right.

James at times inclines towards rationalism in the sense that he confounds the propositions of scientific theory with the necessary truths. This means that he sometimes took the position that scientific propositions could be self-verifying (see White, 1973, pp. 176-179). The limitations on what constitutes a necessary truth (as opposed to a scientific proposition) are not always clear. As White asks, did James believe that Newton's gravitational law $F = G\frac{m_1 m_2}{d^2}$ was a rational proposition in the sense of being "one that we can establish merely by comparing concepts"?(White, 1973, p. 179). White argues that Newton's law is not a rational proposition in this sense; it is a physical law:

> meaning that each particle of matter is attracted by

> every other particle with a force, F, which is directly proportional to the product of their masses, m_1 and m_2, and inversely proportional to the square of the distance, d, between them (White, 1973, p. 178).

But White also argues convincingly that James was inclined to elevate the proposition beyond its hypothetical verifiability in the sensible world and to turn the hypothetical formula into a self-verifying proposition when he states that natural science:

> strives after...a mathematical world-formula, by which, if all the collocations and motions at a given moment were known, it would be possible to reckon those of any wished-for future moment, by simply considering the necessary geometrical, arithmetical and logical implications. Once we have the world in this bare shape, we can fling our net of a priori relations over all its terms and pass from one of its phases to another by inward thought-necessity (James, 1890, 2, pp. 666-667; see also James, 1890, 2, p. 669; and White, 1973, pp. 179, 336).

It must be concluded that James is taking up a rationalist position here because he strongly implies that once the mathematical formula is derived, the properties of the physical world can be derived solely within the mind's ability to compare its concepts. He is confounding the derivation of logical propositions with the derivation of empirically testable hypotheses.

James' inclination towards rationalism--that is, his confounding of necessary and contingent propositions--is largely a result of the status of Newtonian theory in his age. Newtonian theory had been notoriously successful in 'unravelling' the mysteries of the cosmos, and scientific optimism was running high. Theorists really believed that Newton's laws, and the scientific discoveries that followed their acceptance, had eventuated in a unified view of nature. Their task was simply to put the finishing touches on the whole edifice of scientific theory (see Chap. 1, p. 7). James did not realize that Newtonian science was already in trouble for he was unaware of

the significance of the changes that were taking place in the physical sciences. He can hardly be blamed for this; the rumblings in physics only become significant from the perspective of historical hindsight. Instead, James ratified the progressive view of history, holding that the empirical confirmation of scientific theory was only necessary to verify the correspondence between phenomenal appearances and scientific hypotheses. He believed that the eternal verities or necessary truths could not provide the thinker with the means of locating their sensible correlates. But if the sensible correlates were once discovered, then the thinker could be confident "that the eternal verities will obtain of them" (James, 1890, 2, p. 663; see also p. 634). It was not altogether illogical for James to conclude that once the eternal verities, and the mathematical/logical theory derived from them had received confirmation through the location of correlated sensible objects and appearances, that the mathematical/logical theory would itself be self-verifying when its parameters were extended.

James concludes his discussion of the rationalization of the physical world through science as follows:

> Take any other mathematico-mechanical theory and it is the same. They are all translations of sensible experiences into other forms, substitution of items between which ideal relations of kind, number, form, equality, etc., obtain, for items between which no such relations obtain; coupled with declarations that the experienced form is false and the ideal form true, declarations which are justified by the appearance of new sensible experiences at just those times and places at which we logically infer that their ideal correlates ought to be. Wave-hypotheses thus make us predict rings of darkness and color, distortions, dispersions, changes of pitch in sonorous bodies moving from us, etc.; molecule-hypotheses lead to predictions of vapor-density, freezing point, etc.,--all which predictions fall true.
>
> Thus the world grows more orderly and rational to the mind, which passes from one feature of it to another by deductive necessity, as soon as it conceives it as made up

> of so few and so simple phenomena as bodies with no properties but number and movement to and fro (James, 1890, 2, p. 669).

The objects of science appear to have the ability to compel belief because they appear when scientific theories predict they will. Finally, they appear as parts of rational, potentially self-verifying systems in those sections of the Principles where James lapses into a rationalist account of science. But James' lapse into rationalism must be balanced by the empirical position he advances in regard to what makes scientific objects believable.

Primary Qualities and the Objects of Science

In constructing his theory of reality, James explicitly states that scientific objects are believed in because they can be discovered in the sensible world. Therefore, the intersection between the worlds of sense and science must be examined in order to set up criteria of believability for the objects of science. James writes that "What science means by 'verification' is no more than this, that no object of conception shall be believed which sooner or later has not some permanent or vivid object of sensation for its term" (James, 1890, 2, p. 301). It is the appearance of 'permanent and vivid objects of sensation', when and where the scientist predicts them that confirm scientific hypotheses. This verifiability criterion can be broken down, psychologically, into two major sets of realities. On the one hand, the truths of science are regarded as logical structures (when James leans towards rationalism). On the other, the objects of science are 'real' because they exhibit primary qualities, or they are 'real' because they appear in the secondary qualities as they are understood to be effects of primary qualities (see James, 1890, 2, p. 669).

James writes that "The molecules and ether-waves of the scientific world,...simply kick the object's warmth and color out, they refuse to have any relations with them" (James, 1890, 2, p. 293). The secondary qualities have no place in science. "The objects of this scientific world are not related by patterns of human meaning and values, but rather by relations of quantitative variables or, as James says, by 'laws'" (Wild, 1969, p. 148). James' insistence that scientific claims are 'believable' because they can be verified in the 'world of sense' does not appear surprising at first, given his breakdown of sensory phenomena into primary and secondary qualities, and his assertion that the primary qualities--in both the physical and psychological sense--are responsible for particular selections from physical reality. There is a correlation between the 'realness' of sensory experience and the 'realness' of the objects of science. But James is well aware that the sensible world is not constructed so as to admit an intuitive verification of scientific postulates. While James stresses that the primary qualities of sensible objects are experienced as the 'more' permanent qualities, he also stresses that the secondary qualities are perceived as 'real' properties of the object. Furthermore, the secondary qualities of the sensible world exert a more immediate demand on attention than the scientific realities of molecules and vibrations:

> Witness the obduracy with which the popular world of colors, sounds, and smells holds it own against that of molecules and vibrations. Let the physicist himself but nod, like Homer, and the world of sense becomes his absolute reality again (James, 1890, 2, p. 302).

The theories of physics do not describe reality as it is given to us through the senses, or, more correctly, they do not describe reality as it is immediately experienced. But the objects of physics <u>do</u>, according to James, correlate with certain properties of the

sensible world, so that our intuitive notions of causation and the 'sophisticated' physical theories of causation are correlated:

> Sensible objects are thus either our realities or the tests of our realities. Conceived objects must show sensible effects or else be disbelieved. And the effects, even though reduced to relative unreality when their causes come to view (as heat, which molecular vibrations make unreal), are yet the things on which our knowledge of the causes rests. Strange mutual dependence this, in which the appearance needs the reality in order to exist, but the reality needs the appearance in order to be known ! (James, 1890, 2, p. 301).

Sensible appearances and scientific objects would appear to come together in James' psychology through his use of the primary and secondary qualities distinction. The primary or tactile properties of the sensible world were shown to provide the most basic data for the premise that the reality of the physical world could not be doubted while the more fluctuating secondary qualities act as signs that real, tactile objects are present. But there is a problem here. When James discusses scientific objects in terms of primary and secondary qualities, he reverts to the traditional Galilean definition of primary and secondary qualities.

Scientific objects, unlike sensible objects, are composed of the primary qualities alone so that James is ratifying the ontological distinction between the two sets of qualities. He is using the distinction in the traditional sense to distinguish between those properties which really inhere in the object itself, and those which are excited in the mind when the object interacts with a sentient observer. He has abandoned the psychological usage of primary and secondary qualities, wherein primary qualities were judged irrefutably real because they were capable of producing tactile sensations (pain and pleasure) in the observer. But there still appears to be some correspondence between the two usages of the doctrine in

the sub-worlds of sensory and scientific objects. The primary qualities which really inhere in objects produce sensations that are experienced in particular ways by the observer--that is, the primary qualities of objects produce tactile feelings, and the tactile feelings are distinguished from sensations mediated through other organs (vision, smell, hearing, and taste) insofar as they are less fluctuating, more immediate. But the psychological use of the doctrine is not based on an ontological distinction between the two types of qualities: instead, tactile sensations form the base of a sensational hierarchy, and are judged most real. James also allows that secondary qualities are productive of pleasure and pain, and that the adult observer uses secondary qualities as guarantors of the presence of objects. Primary qualities in James' psychological doctrine are merely more real, or less fluctuating than secondary qualities. In his usage of the doctrine to describe the objects of science, primary qualities alone are real; secondary qualities are the products of the interaction between the primary qualities of objects and sentient human observers.

Sensory objects and scientific objects appear to be related through the shared possession of primary qualities at least. The observer experiences the primary qualities of objects through the senses, and thus experiences them in terms of their pleasure and pain producing proclivities, but it might be argued that the qualities that are 'known' in both sub-worlds remain constant, so that scientific hypotheses could be verified through the senes. However, the case is not quite that simple. James typically defines scientific objects as collocations of atoms or molecules in motion. But in another section of the Principles, scientific objects are alluded

to as "nothing real but solids and fluids and their 'laws'...of motion" (James, 1890, 2, p. 292). The fit between an atomistic or reductionist theory of matter and the Galilean form of the distinction between primary and secondary qualities has always been difficult, simply because the primary (real) qualities are identified with certain qualities of objects as perceived, while the qualities of atoms, as such, are not perceivable. If scientific objects are defined as atoms in motion, then the primary qualities of the psychological distinction and the primary qualities of the scientific distinction (as it was popularized by Galileo) are not identical. The primary qualities of molecules in motion manifest themselves to the observer in primary and secondary qualities indifferently. In the example cited above (see p. 279), James writes that molecular vibrations produce the effect of heat for the observer. Thus, applying the primary and secondary qualities distinction, we find that the primary quality of movement produces the secondary quality of heat for the observer. In the psychological distinction, however, the tactile sensation of heat would have to be adjudged the primary quality, while the molecular motion, would be secondary. In general, motion (which was a primary quality for Galileo and thus for subsequent thinkers), could only occasionally be accounted primary on James' psychological distinction--that is, only when the motion is of bodies large enough to be felt as wholes.

When James defines scientific objects as solids and fluids and their laws of motion, the 'Galilean' form of the doctrine can be applied to perceivable objects, and we could conceivably expect to find a correspondence between primary qualities in the psychological sense and primary qualities in the ontological sense. The Galilean

primary qualities of figure (shape), number and motion, would all be tactually perceivable. Thus, scientific hypotheses could be verified through sensory experience. If scientific objects are defined as atoms in motion, however, the sensory verification of scientific hypotheses is more difficult, or less direct. Atoms in motion are not experienceable through ordinary sensory means. The existence of atoms is inferred by the discovery of regular patterns of events in the sensible world. Furthermore, the notion of an atomic theory of matter has its genesis in the world of ideal relations and necessary truths, and not in the world of sensible objects.

The relationship between scientific and sensible objects is problematic because James most consistently defined scientific objects as atoms in motion.[17] This means, essentially, that he is accepting the notion that primary qualities belong to atoms in motion, and that these underlying primary qualities produce the sensed, or psychological primary and secondary qualities of the sensible objects. And it follows from this that sensible primary and secondary qualities are used indifferently to infer the presence and activity of atoms in motion:

> Wave-hypotheses thus make us predict rings of colour distortions, dispersions, changes of pitch in sonorous bodies moving from us, etc.; molecule-hypotheses lead to predictions of vapor-density, freezing point, etc.,-- all which predictions fall true (James, 1890, 2, p. 669).

James is not concerned with demonstrating that some experienced properties of objects are real, while others appear only when the primary qualities of objects interact with sentient observers. Instead, he is concerned with demonstrating the means whereby

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17. The only place where James defines scientific objects as solids and fluids and their motions is James, 1890, 2, p. 292. Throughout the rest of the Principles he consistently describes scientific objects as atoms in motion.

sensible objects can be used to substantiate hypotheses based on the definition of scientific objects as atoms in motion (see James, 1890, 2, pp. 668-671). The hypothesis that James intended to link the sensible world and the scientific world through the primary and secondary qualities doctrine--that is, through an identity of primary qualities--must be discarded. Scientific theorizing and verification proceed according to the following pattern: the mind, with its abstract capacities--described in the operations of the ideal relations and necessary truths--is motivated to rationalize sensible experience. The generation of any scientific theory is therefore determined by the particular abstract capacities of the mind and the build-up of sensible experience. Atomic theories are therefore generated to 'explain' selected appearances (see James, 1890, 2, p. 667). The scientific theory begins as an abstract, ideal proposition--for example, that the mathematical sum (called the total energy of the molecules considered), containing the mutual distances between objects, is constant throughout their movements (see James, 1890, 2, p. 668). The scientist then returns to the world of sensory experience to determine whether or not sensible objects appear to behave in the ways predicted by this mathematical/mechanical formula. In attempting to verify his hypothesis, the scientist searches for sensible phenomena such as rings of colour, distortions, changes in pitch, vapor density, etc. (see James, 1890, 2, p. 669, quoted above, p. 282). Sensible appearances serve as confirmations of scientific theories because "the things of Nature turn out to act as if they <u>were</u> of the kind assumed. They behave as such mere drawing and driving atoms would behave" (James, 1890, 2, p. 668).

The psychological form of the primary and secondary qualities

distinction does not aid the scientist directly in his attempt to disengage scientific objects from beneath their sensible manifestations. It is instrumental only insofar as it provides a formal description of the properties which sensible objects possess, and which coerce our unquestioning belief in their independent reality. The belief in the reality of sensible objects is critical to scientific theorizing because it provides the only possible insurance that scientific objects exert real effects--that is, that the primary qualities inhere in them, so that the psychologically apprehended primary and secondary qualities have their genesis in underlying causes. To this end, James writes:

> The conceived system, to pass for true, must at least include the reality of the sensible objects in it, by explaining them as effects on us, if nothing more. The system which includes the most of them, and definitely explains or pretends to explain the most of them, will ceteris paribus, prevail (James, 1890, 2, p. 312).

The existence of scientific objects can therefore only be indirectly verified, but these indirect verifications are accepted because the scientific objects conform to some (although not all) of the demands of the sensible world and the world of ideal relations. We have made the distinction between ideal relations that are self-verifying, and those which require verification in the sensible world. Scientific theories display logical relationships between their parts, and even if they are not self-verifying, they are 'satisfying' in a logical sense. The correlation between appearances and theoretical postulates adds to the believability of scientific theories: the realness of sensible appearances cannot be doubted. And when sensible appearances seem to confirm that objects behave in the ways that they would if scientific hypotheses were true, the credibility of the hypothesis is ensured. The motivation to believe

in the objects of science is largely given through James' belief that the mind is constituted to rationalize the world--the thinker wants to believe that cause and effect are lawfully determined, and any evidence that supports this conception is treated seriously.

The believability of scientific objects depends upon the correlation of abstract hypotheses and sensible experience, and therefore scientific objects occupy a more precarious place in the hierarchy of belief than either of the two sub-worlds responsible for their generation. That is to say, the objects of science are discarded as believable objects when new theories are generated which take account of a wider range of sensible phenomena. James did not anticipate the collapse of Newtonian science; he believed that the Newtonian science of the late nineteenth century had the rationalization of the physical world well in hand, and he believed that progress towards this end would be cumulative. The point is that he left room in his theory for a major paradigm shift in regard to the nature of scientific objects, and he allowed for change and development within the broad Newtonian paradigm. This is quite a different matter from the claim that he believed that the physical world could really be described by the mathematical/mechanical theory of Newtonian science. If he believed in the reality of Newtonian atoms, he was on the verge of developing a relativistic conception of scientific progress. That he did not actually manage to do so will be shown to be largely the result of his faith in the science of his day.[18]

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18. This issue is discussed in Chaps. 7 and 9.

The Metaphysical, Aesthetic, and Ethical Axioms of the World of Ideal Relations

Of the metaphysical axioms James says: "But alongside of these ideal relations between terms which the world verifies, there are other ideal relations not as yet so verified" (James, 1890, 2, p. 669). James places the metaphysical axioms in the world of ideal relations because he believes that metaphysical axioms do not make a particularly close 'fit' with many of the events in the natural world:

> But all around these incipient successes (as all around the molecular world, so soon as we add to it as its 'effects' those illusory 'things' of common-sense which we had to butcher for its sake), there still spreads a vast field of irrationalized fact whose items simply are together, and from one to another of which we can pass by no ideally 'rational' way (James, 1890, 2, p. 670).

The purpose of these axioms lies elsewhere: they provide the 'framework' for the rationalization of the world of sense (see James, 1890, 2, pp. 670-671, quoted below). Verification of the metaphysical axioms is therefore extremely problematic: for every case where the axioms 'fit' with particular natural events, we are likely to find contrary, or 'irrelevant' cases in nature. Thus James justifies the role of the metaphysical axioms in the rationalization of reality as follows:

> It is not that these more metaphysical postulates of rationality are absolutely barren--though barren enough they were when used, as the scholastics used them, as immediate propositions of fact. They have a fertility as ideals, and keep us uneasy and striving always to recast the world of sense until its lines become more congruent with theirs. Take for example the principle that 'nothing can happen without a cause'. We have no definite idea of what we mean by cause, or what causality consists in. But the principle expresses a demand for some deeper sort of inward connection between phenomena than their merely habitual time-sequence seems to us to be. The word 'cause' is, in short, an alter to an unknown god; an empty pedestal still marking the place of a hoped-for statue. Any real

> inward belonging-together of the sequent terms, if discovered, would be accepted as what the word cause was meant to stand for. So we seek, and seek; and in the molecular systems we find a sort of inward belonging in the notion of identity of matter with change of collocation. Perhaps by still seeking we may find other sorts of inward belonging, even between the molecules and those 'secondary qualities', etc., which they produce upon our minds.
>
> It cannot be too often repeated that the triumphant application of any one of our ideal systems of rational relations to the real world justifies our hope that other systems may be found also applicable. Metaphysics should take heart from the example of physics, simply confessing that hers is the longer task. Nature may be remodelled, nay, certainly will be remodelled, far beyond the point at present reached. Just how far?--is a question which only the whole future history of Science and Philosophy can answer. Our task being Psychology, we cannot even cross the threshold of that larger problem (James, 1890, 2, pp. 670-671).

The fertility of the metaphysical ideals lies in the fact that they are not immediately verifiable. They require, therefore, an extra fiat of belief to keep them in consciousness and to keep us actively engaged in realizing their potential in the world. Beliefs of this kind satisfy the emotional and active needs, whereas beliefs in scientific, mathematical, and logical postulates satisfy intellectual needs (see James, 1890, 2, p. 317). Belief, in this emotional sense, becomes the active faculty most often associated with James' famous 'will to believe'. The function of the metaphysical axioms is to act as the instigations for change in the natural world. There is little or nothing in the natural world to coerce the individual into believing in any particular metaphysical axiom. In James' view, perceptual evidence confirms our scientific belief in the molecular 'substructure' of the physical world, but he insists that no amount of perceptual evidence can be satisfactorily offered for the principle 'nothing can happen without a cause'. The rationale for believing in such a principle is that having faith in its veracity may eventually facilitate the rationalization of the world in such

a way that the proposition becomes true. This same rationale provides the basis for James' pragmatic methodology.

Metaphysical axioms would appear to occupy a position somewhere between the self-verifying propositions of mathematics and logic, and scientific theories in the world of ideal relations and necessary truths. Ideal relations of the highest order--for example, mathematical relations of the type 2 + 2 = 4--are self-verifying; they can be neither verified nor falsified by any appeal to the physical world. Scientific objects, on the other hand, must be discovered in the sensible world if they are to retain their believability. Metaphysical axioms take up a position half-way between these two types of ideal objects because they do persist when challenged. They can only be challenged by other metaphysical axioms, or at best by partial evidence in the physical world. But while they are believable as logical propositions, they are not self-verifying. The truth of a proposition such as 'nothing happens without a cause' is not coercive in the same sense that the truth of the proposition 2 + 2 = 4 is. On the other hand, the compilation of events with seemingly definable causes does not constitute 'proof' for the postulate either, for the survey of events is never exhaustive, and causes are only deducible from effects, so that causes are only potentially 'discoverable' beneath phenomenal appearances.

Metaphysical axioms induce the type of belief that James advocates in The will to believe. He contrasts science, morality, and religion so that:

> Moral questions immediately present themselves as questions whose solution cannot wait for sensible proof. A moral question is a question not of what sensibly exists, but of what is good, or would be good if it did exist. Science can tell us what exists; but to compare the worths, both of what exists and of what does not exist, we must consult not science, but what Pascal calls our heart. Science herself

> consults her heart when she lays it down that the infinite ascertainment of fact and correction of false belief are the supreme goods for man. Challenge the statement, and science can only repeat it oracularly, or else prove it by showing that such ascertainment and correction bring man all sorts of other goods which man's heart in turn declares. The question of having moral beliefs at all or not having them is decided by our will. Are our moral preferences true or false, or are they only odd biological phenomena, making things good or bad for us, but in themselves indifferent? How can your pure intellect decide? If your heart does not want a world of moral reality, your head will assuredly never make you believe in one (James, 1896/1911, pp. 22-23).

While the mind may be 'coerced' into believing in scientific objects, belief in metaphysical, aesthetic, and ethical postulates cannot be coerced. Belief in these postulates requires an effort of will; this is James' famous will to believe, and it comes into play when no evidence exists for making the choice between accepting or rejecting the unverifiable option. Selection is 'free', for there are no 'empirical facts' to persuade the individual into accepting or rejecting a given axiom. Nor can the individual be coerced into believing in the axiom because it is self-verifying.

The concept of belief, in the active sense of believing in yet unverifiable options, was James' major legacy from Renouvier and it lies at the heart of his philosophy. Perry describes Renouvier's system as follows:

> Belief is nothing, if not sure; reason cannot ensure it; therefore, the consummation of belief can take place only through an act of will--a premature and hazardous self-commitment. The only sort of justification which such an excess of assurance over evidence can possess is a moral justification. So we are brought back to the subjective basis of belief. This does not mean that belief is subjectively extemporized, or created out of whole cloth; but that belief is completed--clinched, adopted, fixated--by a subjective act impelled by subjective motives. And once the legitimacy of these motives is granted they are entitled to a sphere of their own. Broadly speaking, we may say that where experience and logic are not decisive, and where there is at the same time a practical need of belief, there belief may and should be dictated by moral and religious considerations. As a matter of fact, says Renouvier, followed by James, all of the great philosophical systems

> are expressions of the temperaments and inclinations of their authors, however much they may profess to submit only the irresistible proof (Perry, 1935/1974, 1, p. 657).

The function of this special kind of belief is to provide assent and affirmation to ideas which cannot be verified through experience, or through logical deduction. When the mind is compelled by actual objects or consistent relations within conceptual systems, belief is merely a kind of passive assent to what is already 'known'. Purposively speaking, the function of the will to believe is to propel action in accordance with ideas which are not already substantiated in experience, and may not be substantiated through the ordinary means of scientific procedure:

> But is it psychologically possible that will should induce belief? Renouvier's answer is that this is the one and only thing that will can induce. The will cannot act directly on the body, but applies itself, in the form of attention, to ideas; and when an idea is thus dwelt upon and survives to the exclusion of others, it straightway expresses itself in appropriate action. This is the doctrine of will which James said he owed to Renouvier (Perry, 1935/1974, 1, pp. 657-658).

This is clear enough. But the selection of 'objects' or 'options' where such effort of the will is necessary is more problematic. Are metaphysical, aesthetic, and ethical beliefs unconstrained? In "The will to believe", James insists that the decision to believe or not believe in any option (for example, to believe in Christianity or agnosticism, in Mohammedanism or theosophy), is determined by whether or not the option is 'living' or 'dead', 'forced' or 'avoidable', and 'momentous' or 'trivial' (see James, 1896/1911, p.3). Living options are those "in which both hypotheses are live ones" (James, 1896/1911, p. 3); forced options are those decisions where "there is no standing place outside of the alternative" (James, 1896/1911, p.3); while 'momentous' options are unusual or

unique opportunities. The refusal to choose between living, forced, and momentous options loses the chance of 'greatness' as surely as trying and failing (see James, 1896/1911, p.4). What is it then, which makes one option living, forced, or momentous, and makes another dead, unforced, or trivial? James' only comment is that our willing nature has previously selected another option which is antagonistic to the 'dead' option (see James, 1896/1911, pp. 8-9). He then describes the 'live' options for 'nineteenth century New England' (see James, 1896/1911, p. 9; and Kuklick, 1977, p. 172), adding only that "we disbelieve all facts and theories for which we have no use" (James, 1896/1911, p. 10). Thus Clifford and Huxley find no 'use' for traditional Christianity whilst Newman does (see James, 1896/1911, p. 10). Furthermore, metaphysics and ethics present a wide and often conflicting panoply of possible options (see James, 1896/1911, p. 16). Writers such as Knox (see Knox, 1914, p.77), view the range of options as evidence of James' insistence on individualism and freedom and are content to leave the analysis there. Kuklick is not satisfied and rightly claims that James failed to develop a social theory of ethics, seeking refuge in the psychological dynamics of belief (see Kuklick, 1977, p. 177).

James' failure to go beyond examples in terms of what makes an option living or dead, makes it difficult to determine how free of constraint ethical and metaphysical selections are. For example, Huxley adopted an agnostic position in regard to religious truths when he became a Darwinian. Agnosticism was compatible with Huxley's belief in the 'rightness' of evolutionary theory, and his ethical decision to disbelieve in the argument from design was compatible with his strong desire to affirm the uniformity of nature as defined

within the mathematical/mechanical model of nature (see Goudge, 1967, p. 102). Huxley therefore made an ethical decision to 'believe' in evolutionary theory and to take an agnostic position with regard to religion. But his ethical decision, in Jamesian terms, cannot be considered an absolutely free decision because James claims that "Science can tell us what exists" (James, 1896/1911, p. 22). Huxley was caught between two momentous, live, and forced options regarding evolution and religion. The question is whether or not scientific evidence was necessarily determinative in setting up the dilemma in the first place and whether its existence necessitated the rejection of one option if the other was accepted. Carpenter was caught in the same dilemma, agreed that the evidence for evolution was coercive, and accepted the theory. But he was unwilling to make a concomitant rejection of religion, believing instead that religion and evolutionary theory would ultimately prove compatible. Thus Huxley need not have affirmed the 'truth' of evolutionary postulates at the expense of Christian arguments on the basis of scientific evidence per se. The evidence for evolutionary theory necessitated reworkings in both scientific and religious paradigms, and to the extent that it necessitated such reworkings, it was coerceive. It was not, however, determinative in the selection of the metaphysical options (for example, the uniformity of nature versus Christianity).

The adoption of particular metaphysical and ethical postulates is not determined by the objects of other sub-worlds of reality but it is constrained by them, and this is important, if James' notion of 'live' options is to be taken seriously. In the examples above, metaphysical beliefs are constrained by factors other than other

possible metaphysical axioms. James at times seems to have been blinded by his own conception of what a 'perfect' metaphysical belief would consist in and what its 'truth' would do for the understanding of the world. In the Principles he says:

> The perfect object of belief would be a God or 'Soul of the World', represented both optimistically and moralistically (if such a combination could be), and withal so definitely conceived as to show us why our phenomenal experiences should be sent to us by Him in just the very way in which they come. All Science and History would thus be accounted for in the deepest and simplest fashion. ... It is safe to say that, if ever such a system is satisfactorily excogitated, mankind will drop all other systems and cling to that one alone as real. Meanwhile the other systems coexist with the attempts at that one, and, all being alike fragmentary, each has its little audience and day (James, 1890, 2, p. 317).

Such perfect objects of belief as these may not be constrained by definable objects in the other sub-worlds of reality, and may in fact arise more directly out of the back-door tendencies. But there is no guarantee of this, and James' evaluation of metaphysical and ethical postulates as areas of free selection may in fact be a major weakness in his theory of belief and in his pragmatic methodology.

Conclusions

The discussion of the three major sub-worlds of reality has emphasized the conditions which are necessary for the mind to assent to the reality of any event or object that is experienced. The constraints on 'free selectivity' are fairly tight--the mind is coerced by internal or external constructs to grant reality to objects in the sub-worlds of sense and ideal relations. The mind selects; it does not create, and this means that whether or not the mind is efficacious depends on the degree of constraint on free selectivity operative in each sub-world of reality. It is important, too, that the mind is not unstructured, that the mind 'interprets' any piece

of experience according to congenital and developed constructs. Perry treats the 'inborn' tendencies in the context of describing James' 'nativism': by nativism he means James' "general tendency to emphasize what is original rather than what is acquired" (Perry, 1935/1974, 2, p. 80), and he goes on to say that:

> This took two forms. In the first place, influenced by Darwin, he credited the human mind with a liberal share of inborn traits and aptitudes. This appears in his long list of human instincts, and his apparent readiness to add to the list, as well as in his recognition of innate categories which predetermine the human modes of thinking and even of experience. In the second place, he believed in the diversity and fecundity of first experiences (Perry, 1935/1974, 2, p. 80).

While James believed that the physical world influenced the mind by 'stamping copies' of space and time relationships upon consciousness, so that "the mind is passive and tributary, a servile copy, fatally and unresistingly fashioned from without" (James, 1890, 2, p. 632), he insisted that the scientific ordering of the world resulted from the verification of internally generated theories so that: "Instead of experiences engendering the 'inner relations', the inner relations are what engendered the experiences here" (James, 1890, 2, p. 638). The mind is so constructed that it automatically compares and classifies information it receives (see James, 1890, 2, pp. 643-646). This means that even the space-time relations, passively received, can be, and have been, translated into mathematical/mechanical/logical systems. The tendencies of the mind to compare and classify information therefore result in the great conceptual systems (see James, 1890, 2, p. 659).

But the fact that the mind is active, selective, and that it is structured to compare and classify does not guarantee that it is efficacious. As Kuklick says:

> The contents of consciousness...were empirical, and the function of mind was selective attention: it accentuated and emphasized certain items and did the reverse with others. This was the contrast between the empirical (empirical contents of the mind) and a priori (the selective attention definitive of mind) (Kuklick, 1977, p. 169).

The nature of selective attention is determined in part by the mental tendencies and traits and the subsequent 'build-up' of conceptions about the nature of reality. Furthermore, as Kuklick emphasizes, James insisted that the mind itself could not make changes in the physical constitution of the universe (see Kuklick, 1977, pp. 173-174), and he makes the distinction between what the mind might 'like' to be real and what the will can effect in the way of change in the physical world (see Kuklick, 1977, pp. 167-168).

James made two separate attempts to demonstrate that consciousness is efficacious. His first attempt at a teleological definition of mind (see Chap. 2), did not provide a 'scientific' construct for psychology, and as Kuklick points out, James had given up the notion of a specific fiat of belief or assent by the time he came to construct the stream of consciousness (see Kuklick, 1977, p. 178). The 'fiat' of the interest theory was transferred to the ability of consciousness to differentially attend to ideas (see Kuklick, 1977, p. 178). James' second option was to make the mind an organ of selection; this is the viewpoint of the Principles, and James attempts to define the mind's relationship to the various sub-worlds of reality in such a way that there is room for 'free' choice within the interaction between inner and outer constructs. The structure of the sub-worlds of reality is crucial in this context because the nature of the object determines, in part, how the object will be experienced by consciousness. At the same time, James struggles to stay within the confines of psychology so that the nature of objects

can only be discussed within the context of human experience. This means that the question of free will cannot be decided within the confines of psychological investigation--and James is well aware of this. Thus, the problem of whether or not the mind is efficacious cannot be resolved within the confines of psychology: all that James can do is to construct the relationship between the mind and its objects in a form that is most conducive to an interpretation of mind as efficacious. He therefore tries to define the operations of the mind and its interaction with the sub-worlds of reality so that mind is sometimes coerced, and sometimes 'free'. He does this by attempting to create a structural 'hierarchy' of belief; that is, the mind is both 'passive' and 'active' in its beliefs, and in certain circumstances, can choose to attend to this object rather than that. This position is somewhat dangerous because it appears to lead to a functional dualism which could potentially impair the structural unity of the mind. The principles of selectivity and the 'hierarchy' of realities are combined in the Principles and James' hope is to thereby establish a framework in which the first option--that is, a teleological definition of mind--could be considered. But the difficulties of establishing a selective 'hierarchy' are compounded by James' own indecision regarding idealism and scientific materialism.

James was caught, according to Kuklick, between the demands of scientific materialism and Royce's idealism (see Kuklick, 1977, p. 183), and this dilemma was reflected in his writings on the nature of science and metaphysics. Kuklick writes that James:

> half-heartedly defended a scientific psychology and a metaphysical idealism, neither of which satisfied him; and he half-heartedly defended a distinction between the two which he did not believe. ...There was a similar synthesis in the development of the functionalist or pragmatic view

> of mind; it too followed from James' unsatisfactory view of the scientific and real worlds (Kuklick, 1977, pp. 184-185).

Kuklick presents a cogent analysis of James' difficulties. He states that James' belief in Renouvier's skepticism regarding the absolute status of truth was shattered by Royce's argument that ideas were transcendent in the sense that they were true or fase because they 'intended' an absolute idea (Kuklick, 1977, p. 177). Thus, according to Kuklick, James wavered between scientific materialism and Royce's idealism, breaking his psychology into two distinct strands to accommodate both streams of philosophy. This hypothesis enlarges White's criticism that James wavered between rationalism and the 'spontaneous variation' of scientific theories, and both of these criticisms lend weight to the hypothesis that, whatever his intentions were regarding the construction of a hierarchical conception of selectivity, James' theory of belief must be analyzed in terms of the dualisms it incorporates.

That James intended to construct a hierarchical model of belief is confirmed by the hierarchy of selection he established. The hierarchy is organized in terms of the constraints imposed on the selection of possible 'objects'. The organs of sensation are physiologically constructed so that certain types of objects, effects, or relations can be experienced. Others cannot, so that the foundations of experienced sensations are totally constrained. Next, the world of sense provides a large range of options for selective attention, but its objects cannot be disbelieved if they are attended to at all: the physical properties of the objects themselves, and their subsequent effects on the individual, force him to assent to their independent reality. Moreover, selection is constrained by the nature of the physical world: the individual is forced by

the 'nature of things' to attend to certain objects, while others have a lesser means of forcing attention. This world has a hierarchical construction; the tactile properties of objects demand unhesitating assent to their independent reality and the qualities themselves are not 'selected' by the mind. The properties which appeal to the other senses demand assent, but there is more room for variation in selecting particular aspects of the property. The appearances of the secondary qualities shift through time and space; what is assented to as comprising their 'real' appearances is based on selective experience (see James, 1890, 2, pp. 77-78) and it is also influenced by the primary qualities that 'produce' the effect on the mind. Selection is less constrained when the individual selects the object according to its 'essence', for the individual selects one 'property' of the object as 'essential' according to his needs, and he is free (within specifiable limits) to ignore the other 'essential' qualities of the object.

Selection is freer still in the world of ideal relations--not because the mind does not compare its objects in determinable and determined ways, but because it need not compare them at all. James says that "It need not compare its materials but if once roused to do so, it can compare them with but one result, and this is a fixed consequence of the materials themselves" (James, 1890, 2, p. 643). The mind is constructed so that it attempts to make a 'fit' between its own logical constructs and the physical world (see James, 1890, 2, p. 667), but it is compelled no further. Furthermore, the mind is compelled to grant assent to the proposition that 2 + 2 = 4, if it attends to the proposition, but it is not compelled to attend to this truth as it is compelled to attend to the sensation of pain that accompanies being stabbed by a dagger. The realities of the

ideal world correspond to the realities of the world of sense because they are 'universally recognizable' objects, and as such, command assent to their reality. But the parallel can be taken no farther. The 'believability' of the ideal relations is based on the structure of the mind; the ideal relations are 'believed' because the basic development of conceptualization is predetermined--predetermined because the mind receives time and space relations from the world of pure experience, and predetermined because the mind compares and classifies the objects of experience according to the 'inclinations' of the back-door processes.

In addition to the self-verifying propositions of logic and mathematics, James' world of ideal relations is also a repository for those axioms which are empirically verified, and those which are only potentially verifiable, and thus require an extra fiat of belief to maintain their place in consciousness. The systems which can be verified--in this case, scientific theories--are more immediately believable than those which cannot--that is, the metaphysical, aesthetic, and ethical systems. This is an artificial division based on James' conception of the progress of science: none of these systems are 'absolutely' coercive in gaining conscious assent for their believability because they partially rely on verification in the world of sense. When corresponding physical objects and relations are discovered, the 'objects' and the theory are believed to be real expressions of the physical world. So far, according to James, the only sensible objects that have been discovered to correspond with the logical deductions from the necessary truths are those which correspond to mathematical/mechanical/logical systems (see James, 1890, 2, p. 665). These are the objects of science, and James says that they are believable by all (see James, 1890, 2,

p. 292).

The objects of science pose the greatest problem because their genesis and qualitative status as objects of belief cannot be 'fixed' within the hierarchy. They mediate between two distinct sub-worlds of reality but the characteristics which give them this function are not clearly defined. Had James taken a strong position regarding the genesis of scientific theories--had he concluded that they were logical deductions from the necessary truths themselves--that they resulted from the mind comparing its conceptions, thus taking a 'rationalist' or 'idealist' (see White, 1973; Kuklick, 1977) stance, he would have had grounds for assuming that the 'objects' of science were believable because they conformed to the dictates of the necessary truths. He also had the option of developing the notion that scientific theories were 'spontaneous variations', and linking their objects more closely with experience. In order to do this, however, he would have had to take a more 'Spencerian' line regarding the genesis of conception--that is, he would have had to take the position that the evolution of the back-door processes was determined or 'shaped' by the physical environment. He was reluctant to do this, and went to some trouble in the Principles to refute Spencer's theory of the genesis of the necessary truths (see James, 1890, 2, pp. 620-632). Had he accepted Spencer's formula, scientific objects would necessarily have been believable because they would correspond with pre-determined mental constructs, which in turn, would be determined by experience in the physical world.

James wavered between both of these alternatives. He wanted to ensure that the mind functioned independently of any absolute postulates. To his way of thinking, pinning mind to the Rationalist absolute was as much a detriment to freedom as including it in the

mechanical model of the automatists or determinists (see Kuklick, 1977, p. 174). But James was careful to insist that the structures of mind are not dependent on the structures of the physical world:

> This world might be a world in which all things differed, and in which what properties there were were ultimate and had no farther predicates. In such a world there would be as many kinds as there were separate things. ...But our world is no such world. It is a very peculiar world, and plays right into logic's hands (James, 1890, 2, pp. 651-652).

We learn, through experience, which things are of the same kind, which things remain in the same state, and which things come together (see James, 1890, 2, p. 652). This experience is correlated with the structural operations of the mind, so that inferences can be made about the world which go beyond sensory experience. The world and the mind interact, but logical, mathematical, and classificatory systems are developed 'independently' of the structure of the physical world itself. Given that the physical world did not manifest any'classifiable' characteristics "logical relations would obtain, and be known (doubtless) as they are now, but they would form a merely theoretic scheme and be of no use for the conduct of life" (James, 1890, 2, p. 652).

James appears to be taking the position that the 'fit' between the systems generated by the structures of the mind, and the physical world, is purely a fortuitous fit. And this casts doubt on the 'universal believability' of scientific objects. If the fit between conception and the physical world is made fortuitous on an a priori basis, then the objects that science discovers may in fact really exist in the world, but they may form only a small and singular subset of potential objects. Moreover, the appearances which indicate the presence of atoms in motion (in James' theory) may in fact be due to underlying effects so far 'undiscovered'. James was able

to make the fit 'believable' because he was unable to foresee that the mathematical/mechanical/logical interpretation of the physical world could give way. He was a Newtonian in his beliefs about the construction of the physical world because he could not be anything else.

James' insistence (in the Principles) that scientific objects were believed or believable by all to be real, and his assertion in "The will to believe" that the mind was coerced into believing in the objects of science, clashes with his insistence that the metaphysical, aesthetic, and ethical axioms were ultimately free of constraints from the physical world. He claimed that no definite verifications of these postulates could yet be made; they stand as guiding principles rather than as descriptions of what the world is like. Their function is to "keep us uneasy and striving always to recast the world of sense until its lines become more congruent with theirs" (James, 1890, 2, p. 671). These are the principles which require will to believe in their truth or 'realness'. It is the coercive nature of scientific principles opposed to the uncoercive status of the ethical and metaphysical axioms which creates the functional dichotomy in James' theory of reality and this problem must now be discussed.

Belief serves two distinct functions in James' psychology. In the world of sense and the world of ideal relations, belief in the 'realness' or 'truth' of the object often appears to coincide with what the mind cannot help knowing. The mind passively assents to the reality of the object in its particular context. Believing in the 'reality' of the object in this sense also ensures that the individual is prepared to act appropriately in response to the object when it appears. Belief, like cognition, facilitates purposive

behaviour so that the 'thought that the teakettle is full' is equivalent to the 'belief that the teakettle is full' (see above, pp. 187-189; see also James, 1890, 2, p. 321; and Wild, 1969, p. 142). Beliefs about the 'reality' of sensible objects are therefore intentional. In this sense, the equivalence between belief and thought applies only to a possible 'set' of thoughts about 'real' objects and our intentions regarding them.

The psychological dynamics of belief in regard to the objects of science are more complex than the dynamics of beliefs about sensible objects. Because the content of any system derived from the eternal verities is at such a remove from the actual physical world, belief is uncoerced by the physical world. There is simply nothing in the physical order of experience to coerce from us the ideas we have of atoms, ether, and underlying mechanical laws. In fact, the 'truths' of science often conflict with sensory experience:

> Science thinks she has discovered the objective realities in question. Atoms and ether, with no properties but masses and velocities expressible by numbers and paths expressible by analytic formulas, these at last are things over which the mathematico-logical network may be flung, and by supposing which instead of sensible phenomena science becomes yearly more able to manufacture for herself a world about which rational propositions may be framed. Sensible phenomena are pure delusions for the mechanical philosophy. The 'things' and qualities we instinctively believe in do not exist. The only realities are swarming solids in everlasting motion, undulatory or continued, whose expressionless and meaningless changes of position form the history of the world, and are deducible from initial collocations and habits of movement hypothetically assumed (James, 1890, 2, p. 665).

The rational orderly universe of science exerts a strong appeal to the mind. Its appeal is so great that:

> The sentimental facts and relations are butchered at a blow. But the rationality yielded is so superbly complete in form that to many minds this atones for the loss, and reconciles the thinker to the notion of a purposeless universe, in which all the things and qualities men love dulcissima mundi nomia, are but illusions of our fancy attached to accidental clouds of dust which the eternal cosmic weather will dissipate as

carelessly as it has formed them (James, 1890, 2, p. 667).

And this is where the psychological differences between believing in the 'realness' of sensible objects, and believing in the 'realness' of scientific objects becomes clear:

> The popular notion that 'science' is forced on the mind ab extra, and that our interests have nothing to do with its constructions, is utterly absurd. The craving to believe that the things of the world belong to kinds which are related by inward rationality together is the parent of science as well as of sentimental philosophy; and the original investigator always preserves a healthy sense of how plastic the materials are in his hands (James, 1890, 2, p. 667).

The function of belief must not be understated here. The desire to relate mental concepts and real objects would account, psychologically, for attempts to directly apply scientific conceptions to the external world. And this is what science means for James: scientific theories are generated on the assumption that there is order underlying the apparent chaos of the sensible world and scientific research consists of attempts to verify this conception in perception. Belief in this sense is an active faculty as it provides the impetus for the concretization of conception in perception. Thus James can quite consistently say that "Will and Belief, in short, meaning a certain relation between objects and the Self, are two names for one and the same PSYCHOLOGICAL phenomenon" (James, 1890, 2, p. 321). Belief now comes with a real fiat for specific action. It is linked with will rather than with cognition and it ensures that the individual will look for validation of his 'plastic' conceptualization in the plastic world of things. Without this attempt to 'fit' the products of conceptualization to the external world, we have metaphysics, not science. This accounts for James' emphasis on verification in the external world, and his rule that conception, to be properly useful, must end in perception.

While James' model of belief allows us to select the scientific theory most compatible with our aesthetic, emotional, and active needs, to the exclusion of other theories which may satisfy our intellectual interests just as well, James' use of the pragmatic method of truth as it applies to science limits the implications we can draw for conceptualization from our verifications.[19] Belief, in this active sense, impels us towards further verification, not towards the creation of further metaphysical assumptions. James develops a positivistic empirical conception of science and a Romantic view of morals, ethics, and aesthetics (see Williams, 1942, pp. 103, 106; see also Kuklick, 1977, p. 166). In consequence, intellectual beliefs become dependent for their continued existence upon perceptual verification. Belief cannot and will not be sustained in the face of contradictory perceptual evidence. Belief, in the case of the scientific theories derived from the necessary truths of mathematics, logic, and classification, acts firstly as a causative agent in 'realizing' the relationship between intellect and object, and secondly, gains impetus, or is coerced, by the discovery that sensible objects behave in ways that are compatible with the theory: "the things of Nature turn out to act as if they were of the kind assumed. They behave as such mere drawing and driving atoms would behave" (James, 1890, 2, p. 668).

The 'final' scientific beliefs about the world of experience

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19. See Chap. 7. pp. 482-484. James developed his pragmatic methodology to act as a means of bringing conception and perception together. He continually stresses the need to verify conception in perception so that the 'ideal' worlds and the world of pure experience have their meeting point in perception. Both 'worlds' have an independent existence. Human experience therefore occupies the central position in James' cosmology, and progress--material and metaphysical--is dependent on human experience.

involve a 'translation' of the elements of reality into a kind of ideal system. The world grows more orderly to the mind as mental constructs are verified by the appearance of specific physical phenomena. These phenomena are selected because they 'fit' with the theory. Order and systematization come about through the process of active selection impelled by belief. Validation of hypotheses come about as follows:

> Take any other mathematico-mechanical theory and it is the same. They are all translations of sensible experiences into other forms, substitutions of items between which ideal relations of kind, number, form, equality, etc., obtain, for items between which no such relations obtain; coupled with declarations that the experienced form is false and the ideal form true, declarations which are justified by the appearance of new sensible experiences at just those times and places at which we logically infer that their ideal correlations ought to be (James, 1890, 2, p. 669).

The world of science which develops is an amalgamation of the sensible and the ideal. The verification of scientific hypotheses, through selection of sensory phenomena, unites the two worlds. The combination of the natural and pure sciences is responsible for the practical application of ideal relations to the physical world. Dynamically, one might assume, the 'passive' belief in the world of sensory objects, and the corresponding 'passive'[20] belief in the ideal relations creates a psychological tension which impels the individual to bring the two together. The result brings the ideal relations into direct relationship with the physical world and transforms the physical world into a kind of ideal system: the colour and complexity and turbulence of objects and relations is changed into "bodies with no properties but number and movement to and fro"

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20. Belief is characterized as 'passive' because the objects that are believed in coerce the mind to grant its fiat to their reality. Selection is still operative within defined limits, however.

(James, 1890, 2, p. 669). The world of science hangs between the physical and metaphysical worlds because of the pull 'downward' of the ideal relations,and the elevation of 'mutated' physical objects. It is believable, but must rely on continued verification to sustain belief. And this is where James' assertion that scientific objects coerce belief becomes problematic. He ignores the need for the continuous verification of scientific theories, and lapses into an implicitly rationalist account of scientific progress. At the same time, he restricts the will to believe to metaphysical, aesthetic, and ethical problems, so that the active role for belief is confined to the limited set of axioms which do not yet have empirical correlates.

Belief is given an active function when it is used in the context of those postulates which do not have definable expectations in the ordinary sense. Metaphysical, aesthetic, and ethical beliefs are axioms which provide the impetus for actions wherein the outcome is uncertain, where the task is unusually difficult and perhaps dangerous, and where the action that is required is contrary to the ordinary demands for comfort or survival in the physical world. These beliefs require an extra effort of the will to hold the thought in consciousness. It is this functional dualism (between beliefs in objects with sensible correlates, and beliefs in objects without sensible correlates) that finally makes a hierarchical model of belief untenable.

Metaphysical, aesthetic, and ethical beliefs are not coerced by any particular object, according to James (see James, 1890, 2, pp. 669-670), although he believes that the world will be remodelled because of them (see James, 1890, 2, p. 671). Sensible objects will be discovered, in the cases of metaphysical and aesthetic

axioms, and 'made' in the case of ethical postulates.[21] The function of believing in metaphysical, aesthetic, and ethical axioms is to facilitate the remodelling of the world. The first signs of James' pragmatic concept of progress--described by Marcell as "individualistic, purposive, relativistic, contingent...both object and process, both end and means" (Marcell, 1974, p. 191)--are found in the Principles. Thus James states that before science began to achieve such success in defining the physical world:

> The most promising of these ideal systems at first were of course the richer ones, the sentimental ones. ...The craving to believe that the things of the world belong to kinds which are related by inward rationality together, is the parent of Science as well as sentimental philosophy; and the original investigator always preserves a healthy sense of how plastic the materials are in his hands (James, 1890, 2, pp. 665-667).

The 'objects' of science were not discovered without a struggle and the metaphysical, aesthetic, and ethical postulates will require a similar struggle. And James implies that the outcome was, in the case of science, and is, for other ideal relations, unpredictable.

But the older view of progress is also to be found in the Principles: James never suggests that the Newtonian model of the universe could give way to a new interpretation--it could only be extended (see James, 1890, 2, p. 671). He suggests, throughout the Principles, that once a sensible object is discovered for a 'scientific object' the scientific object will be accepted as believable or 'real'. Theories succeed or fail according to the ability of the theorist to discover their physical correlates (see James, 1890, 2, p. 301). This implies that once objects are discovered for metaphysical, ethical and aesthetic axioms, the

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21. This is certainly a 'romantic' or 'idealistic' view of ethics, and the problems with it for James' psychology are discussed below.

believability of those objects would be coerced and the objects themselves would be stable. Belief is then correlated with cognition instead of the will. The 'discoverability' of metaphysical, aesthetic, and ethical objects rests on which view of progress James ultimately adopts, and Kuklick describes the problems that James' tendency to adopt a progressive view of history were to cause in his pragmatism:

> This doctrine gave James a reputation for philosophic tolerance, but he also defined the limits within which acceptable beliefs would fall. In this enterprise he revealed something less than tolerance. What he assumed to deserve human aesthetic preference were the beliefs congenial to the articulate public of nineteenth-century New England: an optimistic theism was inherently suited to the human animal. The restricted nature of this outlook was plainest when James discussed the beliefs he thought were universalizable if not universal: "Here in this room, we all of us believe in molecules and the conservation of energy, in democracy and necessary progress, in Protestant Christianity and the duty of fighting for the doctrine of the immortal Monroe, all for no reasons worthy of the name." And James tried to show that because of man's practical nature and desire for moral action, a theistic God was the only rational and possible object for us to conceive as lying at the root of the universe (Kuklick, 1977, p. 172; internal quotation from James, 1896/1911, p. 9).

To conclude then, we have shown that James uses the primary and secondary qualities distinction in diverse, and incompatible ways to describe the properties of sensible and scientific objects. The primary qualities of sensible objects do not correspond to the primary qualities of scientific objects. This means that the confirmation of scientific theories through the search for sensible correlates does not correspond to the accredition of reality that is given to sensible objects. This has implications for the broad rationalization of the physical world in ethical and metaphysical terms--if the discoverable objects of science do not correspond to the objects of the sensible world, there is no guarantee that

sensible objects will be discovered that correspond to ethical or metaphysical postulates. That is, like scientific objects, metaphysical and ethical correlates could be expected to appear only as manifestations of underlying structures (analogous to the atoms of science). James' firm commitment to Newtonian progress blinds him to these distinctions, and prevents him from developing the 'relativistic' implications of his theory.

James' tendency to lapse into rationalism in regard to the status of scientific theories poses a further problem. Scientific objects, in the context of James' rationalism, are verified within the system of ideal relations--they are regarded as true and consistent formulations because they are derived from the self-verifying necessary truths and ideal relations. The confusion here in regard to the 'truth' of scientific theories again arises from James' commitment to the nineteenth century progressive view of history. The massive mathematical/mechanical system had been notoriously successful in generating postulates which appeared to lawfully describe the behaviour of sensible objects, so that James' tendency to assume that further verification would eventually become unnecessary was a reasonable, if unwarranted assumption. The status of scientific objects is crucial in unravelling the implications of James' theory of reality because James initially appears to be constructing a theory wherein sensible correlates of the same order as the objects which make up the sensible sub-world of reality are discoverable for other sub-worlds of reality as well. This analysis has concentrated on showing that in fact, the sensible correlates of the other sub-worlds of reality are not equivalent with the objects of the primary world of sensory experience.

Belief, therefore, has two distinct psychological functions. It

is synonomous with cognition in the case of those objects whose reality cannot be disputed. So far, the only objects which have this absolute coercive power are the objects of sense and the objects of the world of ideal relations and necessary truths (as those objects have been defined above). All other objects depend on their relations with the sub-world of sensible reality and the sub-world of ideal relations--in varying proportions--for their coercive power over the mind. Cognitively, the mind is coerced by two types of objects: it grants reality automatically to sensible objects and to the ideal relations and necessary truths. To know objects from either of these worlds is to believe in their existence. Belief in this sense means psychologically that the individual does not doubt that the object he 'knows' is real.

But belief has a second function: when belief is aligned with will rather than with cognition, it functions as the impetus to sustain the active search for objects which will correspond with ideas in the mind. James distinguished this second function from the first when he described the will to believe. Belief functions in this way when sensible correlates have not yet been discovered for ideas in the mind. The will to believe comes into play as a force to sustain metaphysical, aesthetic, and ethical ideas in consciousness so that the individual will strive to discover sensible objects which will verify the 'truth' of the axioms. James believed that sensible correlates had been discovered for scientific theories, so that the will to believe in scientific theories was no longer necessary. Thus, the function of the will to believe is to instigate a search for objects which will turn the belief into a cognitive propositions of the first type. The problem is whether or not ideas which require the

will to believe to sustain themselves in consciousness can be transformed into beliefs of the first types. James intended to construct a hierarchical model of reality, wherein the will to believe could be used to facilitate the rationalization of the world. Scientific knowledge was used as the measure of the success of this transforming activity so that the two functions of belief could theoretically be viewed as the beginning and the end of a single psychological process.

But James did not succeed in this aim. Scientific objects do not become synonomous with sensible objects, as James himself sometimes recognizes. The tension remains between the derivations from the world of ideal relations and the world of sensible objects, and this tension is describable psychologically, in the two disparate functions of belief that have been outlined above. This tension is further increased when the two types of belief are analyzed from a motivational perspective: when belief is passive, as in the case of sensible objects, it acts to facilitate adjustment in the mundane physical world. If the individual is to act appropriately and thus to survive, he must grant reality to the sensible world. Furthermore, once he has mapped the parameters of the physical world, he is at liberty to select objects for his own use by concentrating on some of their properties to the exclusion of others. Belief in this passive, cognitive sense, allows the individual to adapt to the exigencies of his environment and to further his own survival ends in that environment.

But belief is put to a different purpose when the individual attempts to impose ideas onto the physical world--ideas which arise from his unique propensities to generate metaphysical, aesthetic, and ethical postulates. The sensible correlates for these postulates

are not immediately obvious in the perceptual array--they do not impose themselves on the mind, but must be sought for beneath the appearances of physical objects or in the rearrangements of sensible experience (like the objects of science). Belief in the truth or efficacy of the postulate can only come from an active assertion of the will, and belief thus becomes an active faculty for imposing changes on the physical world. It is therefore necessary to examine the structures of action which correlate with the structures of belief, in order to see more clearly how the individual interacts with the various sub-worlds of reality. The structures of action are broken down by James into 'adaptive' features, which account for the individual's tendencies to 'adjust' to his environment, and into tendencies to struggle against the environment as it is given. The concept of 'struggle' is not related to the 'struggle for survival'--that is, an effort towards satisfactory adjustment, but instead, it is transformed along Renouvian lines into the will to change reality, to believe in unverifiable options in the hope and faith that they may, through human effort, become true.

CHAPTER 5

THE STRUCTURES OF VOLITION

Introduction

In his essay "What makes a life significant?" James comes to the conclusion that the real significance of life consists in possessing novel ideals and having the will or endurance to pursue them and make them 'true' in the world. Either intellectual idealism, or the habit of endurance, may bring the individual successfully through the ordinary crises the world inflicts, but neither one on its own can bring the real and fundamental changes to the world which count as 'progress' in James' view (see James, 1899/1949, pp. 306-307). The last two chapters have shown how James aimed at restructuring consciousness so that thought was an active, selective, unified process with the result that the individual's relationships with reality were such as to promote the 'rationalization' of the physical world. The epistemological constraints on the will to believe were also briefly analyzed. James believed that the function of thought is to mediate action, and it is therefore necessary to continue the discussion of James' psychology with an analysis of the structures of action, and in doing so, to determine how the will 'works' to make the novel ideals or conceptions 'true' in the physical world.

James' whole philosophy is devoted to the stated end of ensuring that novel ideals can be made true through the effort of the will and no discussion of his psychology of action is complete if it does not take into account James' views on the ultimate significance of life. James' theory of volition is biased towards his metaphysical conclusions that free will is at least a possibility and the possibility that the will is truly free is maximized by believing in the efficacy of the will. The fervour of James' beliefs in this regard must not be underestimated, for his whole psychological theory of volition is constructed with the aim of maximizing the 'chance' that free will

is a real possibility. His biases show in his attempt to refute the notion of innervation, in his selection of historical and contemporaneous sources for his theory, and in the detailed construction of the theory of volition itself.

Is James really a voluntarist then? The term has been defined as applying:

> to any philosophical theory according to which the will is prior to or superior to the intellect or reason. More generally, voluntaristic theories interpret various aspects of experience and nature in the light of the concept of the will, or as it is called in certain older philosophies, passion, appetite, desire, or conatus. Such theories may be psychological, ethical, theological, or metaphysical (Taylor, 1967, p. 270).

James is a voluntarist in the sense that it is through voluntary actions that meaning, truth, verification, change, and the reconstruction of reality come into being. Moreover, his voluntarism has an evolutionary flavour, not only because of the optimism he expresses regarding the eventual moral evolution of man, but because James' whole psychology stresses the active development of organisms, from the basic reflexive movements to voluntary ideomotor acts, and finally to volition with effort, performed in conjunction with ethical and metaphysical ideals. It is the connection between the first reflexive movements the organism makes in response to the environment, and the eventual development of a voluntary morality that makes James' voluntarism an evolutionary voluntarism and best distinguishes him from the pre-evolutionary German voluntarists such as Fichte, Schopenhauer, and Nietzsche.

But James is not a voluntarist in the 'traditional' sense of these philosophers. In James' psychology, the nature of the voluntary act depends on the status of the idea, thought, or feeling that instigates the action, so that James' theory of action relies on his theory

of cognition. Therefore, the structures of action run parallel to the empirical contents of consciousness. Whether or not an idea will be enacted, or more specifically, how it will be enacted, depends on the believable status of its object and the actual structure of the thought in consciousness. This would imply that the structures of action can be hierarchically conceived; it also implies that the same functional dualism which 'broke up' the hierarchical system of realities may apply to the structures of action, and this hypothesis will be examined below.

James' theory of volition contrasts markedly with his theory of reality in terms of his selection and acceptance of historical and contemporary theories of reality and action. He regards his theory of reality as a fuller and more complete account of traditional theorizing: he states that his account is to be taken as an extension and elaboration of hypotheses advanced in the empiricist tradition, and he acknowledges the importance of the foundations laid by Locke, Hume, Berkeley, J.S. Mill, and Bain (see James, 1890, 2, p. 322). But the pattern changes when James begins to construct his theory of volition: he sets out to show that the broad empiricist tradition has erred in its treatment of voluntary activity, much as it erred in the construction of consciousness. James speaks largely as a mainstream nineteenth century psychologist when he writes about the perception of reality; the philosophical assumptions that intrude in his discussion and create problems of consistenty (in regard to his radically reconstructed consciousness), can be seen as problems or assumptions common to the late nineteenth century scientific community in general. The problems with the theory of volition are different; James has a difficult struggle to stay within the boundaries of psychological discussion and his metaphysical commitments continually intrude--in

the construction of the theory itself and in his assessment of past and contemporary theorizing on the subject. He discusses theories of volition in terms of their compatibility with his notion of free will so that his assessment of any theory is subjectively biased by his metaphysical views. At the same time, James was committed to the efficacy of the scientific method. The same enthusiasm for nineteenth century scientific progress which led him to ratify the mathematical/mechanical/atomistic construction of the physical world was also responsible for his acceptance of reflexology as the biological or physical basis of volition. His theory of volition can therefore be regarded as an attempt to find a place for free will within the constraints imposed by the reflex model of action. The tension between these two commitments runs throughout the theory of volition, and James attempted to resolve the problem by rejecting the theory of innervation and replacing it with an afferent model of perception which provided a cognitive basis for action.

It is relevant that James already had the backbone of his theory of volition figured out by 1880 when he published "The feeling of effort".[1] But by the time he was systematically putting the Principles together, James had worked out his contruction of consciousness; and the theory of volition as it appears in the Principles is more comprehensive--given the preceding stream of consciousness theory--than it could be in 1880 without it. The dependence of the theory of volition on the theory of consciousness will emerge throughout this analysis; the most immediate implications are found in James' refutation of the

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1. Most of James' work on the construction of the stream of consciousness did not really get under way until 1884, although the genesis of James' eventual conception is to be found in the 1879 paper "Are we automata?" (see McDermott, 1967, pp. 818, 819, 821, 827).

theory of innervation.

In 1880, James published his famous paper "The feeling of effort". As Kuklick writes: "The aim of this article was to identify the mysterious sentiment of power, the will or fiat" (Kuklick, 1977, p. 166). But James also wished to make his explanation both physiological and psychological: "I propose in the following pages to offer a schema of the physiology and psychology of volition, more completely worked out and satisfactory than any I have yet met with" (James, 1880/1920, p. 151). An ambitious statement. He goes on to state that the feeling of effort is a universal experience and cites Bain's distinction between the sensational elements of the feeling, and the active mental experience of effort (see James, 1880/1920, p. 152). Traditionally, according to James, these sensational elements of feeling (afferent sensations), and the active mental experiences of effort (efferent sensations), have been treated as completely opposed (see James, 1880/1920, p. 152). He proposes to retain Bain's psychological distinction at the experiential level, but begins a drastic revision of the nature of the muscular and mental feelings of effort (see James, 1880/1920, pp. 152, 194-195).

The groundwork for James' theory of volition is set in the arguments he advances against the theory of innervation. The theory of innervation, first put forward, according to James, by Mueller[2] and elaborated by Bain, states that the feeling of muscular exertion is a result of the sensations which accompany the outgoing stream of nervous energy from the central nervous system (see James, 1880/1920, p. 153; see also Bain, 1868, p. 77). It does not:

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2. See James, 1880/1920, p. 152; James refers to Mueller's Physiologie, 1840, Bd. ii, p. 500.

> result from any influence passing inwards, by incarrying or sensitive nerves. ...It does not follow that the characteristic feeling of exerted force should arise by an inward transmission through the sensitive filaments; on the contrary, we are bound to presume that this is the concomitant of the outgoing current by which the muscles are stimulated to act (Bain, 1868, p. 77).

James notes that Bastian, Ferrier, and Lotze have protested against this view, but he feels that their arguments have not been systematically worked out, and therefore have not provided an effective counter against the theory (see James, 1880/1920, pp. 153-154). James then decrees that:

> the feeling of muscular energy put forth is a complex afferent sensation coming from the tense muscles, the strained ligaments, ...etc. That there is over and above this another feeling of effort involved, I do not deny; but this latter is purely moral and has nothing to do with the motor discharge (James, 1880/1920, p. 154).

He argues that sensory and motor cells are different in appearance and that the motor apparatus is known to be: "absolutely insentient in an afferent direction, although we know that the fibres of the anterior root will propagate a disturbance in that direction as well as in the other" (James, 1880/1920, p. 155).

These physiological data, combined with the psychological dictum "that consciousness seems to desert all processes where it can no longer be of any use" (James, 1880/1920, p. 155) lead James to conclude that: "Our idea, notion, thought, of a movement, what we mean whenever we speak of the movement, is this sensible perception which we get of it when it is taking place, or has completely occurred" (James, 1880/1920, p. 159). The 'sensible perception', introspectively defined, is "an aggregate of afferent feelings, coming primarily from the contraction of the muscles" (see James, 1880/1920, p. 159). Physiological and psychological 'data; are thus combined in support of James' decree that innervation is not a valid concept.[3]

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3. James discusses a wide range of experimental evidence in (contd.)

James' introspective and physiological investigations lead him to the conclusion (supported by Ferrier--see James, 1890, 2, p. 504), that there is no introspective evidence for the existence of feelings of innervation and in fact, experimental evidence disproves the existence of such feelings (see James, 1890, 2, pp. 514-517). Instead he concludes that:

> It is not the thought of the innervation which the movement requires. It is the anticipation of the movement's sensible effects, resident or remote, and sometimes very remote indeed. Such anticipations, ...determine <u>what</u> our movements shall be (James, 1890, 2, p. 521).

And this leads directly to the concept of ideo-motor action. James acknowledges his debt to Carpenter and Bain (see James, 1890, 2, pp. 522, 525), but concentrates on Lotze's analysis (see James, 1890, 2, pp. 523-525). Lotze's influence is important. According to Perry, James discovered the doctrine of ideo-motor action in Lotze's work before 1870 and soon after that rediscovered it in Renouvier's works (see Perry, 1935/1974, 2, p. 88). Lotze's distrust of innervation as a valid theory and his doctrine of ideo-motor action gave James grounds for systematically attacking the theory of innervation and 'encouraged' James to construct his own theory of volition. Perry states that regarding the feelings of effort: "James reversed a judgment which he himself formerly held, that the feeling of effort accompanies the efferent (outgoing) current which innervates the muscle" (Perry, 1935/1974, 2, p. 88). Had he held to this position,[4] his theory of

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3. (contd) support of his position (see James, 1880/1920, pp. 159-180; see also James, 1890, 2, pp. 495-522). This 'evidence' is not specifically discussed here for reasons of space and because the studies themselves are not particularly relevant to the discussion that follows. What <u>is</u> important is that James believed that the question of innervation could be resolved through direct appeal to the physiological and psychological evidence.

4. Perry shows that James' systematic rebuttal of innervation was made in conscious opposition to the leading authority of Wundt and Bain, while Ward stated that the problem of whether the feeling (contd.)

consciousness could not have been made compatible with his theory of volition as will be shown below in the discussion of ideo-motor action. Thus, James' refutation of the theory of innervation determined the scope of his theory of action and enabled him to make the structures of consciousness and the structures of action interdependent.

The structures of volition will now be examined with special reference to pre-voluntary movements and reflex actions, instinctive impulses, emotional expressions, and ideo-motor actions. Volition with effort will be examined in a separate chapter. While James based his theory of volition (including volition with effort) on the reflex action paradigm, the analysis of volition with effort involves excursions into James' moral philosophy while the 'lower' volitional structures can be examined in a purely psychological context. The methodological differences between the two types of analysis therefore make it appropriate to treat volition in two separate chapters.

The Influence of Pre-volitional Structures on Voluntary Behaviour

Voluntary behaviour can be separated into two basic categories--ideo-motor action and volition with effort. Ideo-motor action is the simpler, more common type of voluntary activity. It does not require any special mental effort because the fiat for action consists in the presence of an uninhibited idea in consciousness. Volition with effort is more complex because it requires the presence of an idea or concept in consciousness, and a special effort of attention to sustain the idea against competing ideas or impluses. James makes

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4. (contd.) was afferent or efferent was immaterial (see Perry, 1935/1974, 2, p. 88).

the distinction between this psychological or mental type of effort (or lack thereof) and the feelings of muscular effort exerted when any action is performed (see James, 1880/1920, pp. 154, 195-196).

The dividing line between the refutation of the theory of innervation and the beginning of a theory of volition is found in James' attempt to isolate the types of feelings which are stimulated and elicited by the physical performance of any action. The source of these feelings of effort (as they are experienced in consciousness) has important consequences for James' psychological theory of effort because the theory of volition rests on two major premises. Whether or not a voluntary action can be performed at all depends first on the physiological possibilities of the organism, and second on the ways in which ideas of voluntary actions are developed in the organism (see James, 1890, 2, pp. 486-487, 560-561). Voluntary behaviour is learned behaviour and the genesis of such behaviour must be found in the pre-voluntary reflexes, movements, instincts, and emotional expressions of the organism. Since the theory of volition is based on the refutation of the theory of innervation, the volitional structures are largely determined by pre-volitional experience. It is therefore necessary to examine the pre-volitional behaviour of the organism before continuing the discussion of James' refutation of the theory of innervation, and the theory of volition he developed as a result.

Movement

Bain was the first influential theorist to state that organisms are essentially active, therefore providing psychology with one of its most important conceptions of the *a priori* relationship between the organism and the environment (see Bain, 1868, p. 59; see also Young, 1970, pp. 114-116). After Bain, all psychologies begin with

the basic premise that the organism is structured towards activity as well as reactivity, and James' psychology is no exception. Bain believed "that movement precedes sensation, and is at the outset independent of any stimulus from without" (Bain, 1868, p. 59; see also Bain, 1868, p. 296). Volition develops through the 'education' of the individual; that is, spontaneous movements are associated with their consequences (pleasures and pains), the movements eventually become purposive and voluntary 'reflexes' are developed (see Young, 1970, p. 115; Bain, 1868, pp. 296-306).

At times James appears to follow this paradigm[5] and will, as Kuklick writes: "referred primarily to actions" (Kuklick, 1977, p. 169). Fearing also notes that "James though difficult to classify seems to regard reflex action as the prototype of all action" (see Fearing 1930/1964, p. 297; see also James, 1890, 1, p. 23). But both Kuklick and Fearing recognize that James was somewhat inconsistent on this point. Kuklick states that James sometimes identified the will with action; at other times he 'more correctly' identified it with the 'fiat' for action (see Kuklick, 1977, p. 169). As Fearing points out, this distinction is all-important. At times, says Fearing, James makes the distinction between reflex, semi-reflex, and volitional acts (see Fearing, 1930/1964, p. 297), and Fearing finally classifies James as a member of that group of theorists "who assign specific characteristics to reflexes, but emphasize continuity of the series from the reflex to the will action. ...there is no sharply drawn line of demarcation between reflex and other varieties of

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5. In his article, "Reflex action and theism", James states that "All action is thus re-action upon the outer world" (James, 1881/1911, p. 114; see also James, 1881/1911, pp. 113-117, 142; and Kuklick, 1977, pp. 168-169.

neuro-muscular action" (Fearing, 1930/1964, p. 289).

James was committed to a naturalistic, physiologically oriented theory of action and attempted to develop a hierarchical conception of the structures of action according to the reflex model. But the function of action was a different matter entirely--as Kuklick states, James is a reflexologist when he defines will as action; he is not when he defines will as the fiat for action (see Kuklick, 1977, pp. 168-169). Whether or not James fits into Fearing's 'mechanical' group (see Fearing, 1930/1964, p. 297), or into his 'genetic' group (see Fearing, 1930/1964, p. 289), depends on whether or not the focus is on James' description of the structures of action or on the functions of volition. The inconsistency noted by both Fearing and Kuklick can be resolved by treating the structural and functional aspects of James' theory of volition independently, and then examining the theory of volition to determine whether or not the hierarchical structure is plastic enough to allow for the duality of function that James appears to insist upon.

James first concentrates on defining the physiological basis of voluntary behaviour so that: "the whole neural organism, ...is, physiologically considered, but a machine for converting stimuli into actions; and the intellectual part of our life is knit up with but the middle or 'central' portion of the machine's operations" (James, 1890, 2, p. 372). This statement represents the reflex strand of the theory of volition described by Fearing (see Fearing, 1930/1964, p. 297), and it corresponds to Kuklick's statement that the will is sometimes identified with action. Stimuli are received through the afferent paths, and are felt, or experienced by the organism. During the pre-volitional stage, the organism reacts reflexively or instinctively; the mind merely registers the reaction, and the kinaesthetic patterns

are stored in the memory. Later on, the mind reacts to the stimulus with an 'idea' or 'impulse' (corresponding to the initial reflex movement), which stimulates physical movement. This is an oversimplification of James' view of the development of the volitional structures out of reflex structures, and so far, it parallels Bain's theory.

But James' reaction against the theory of innervation now asserts itself in positive form. He insisted that it was the afferent feelings that were received by the mind when an action was performed; the mind 'felt' the movements of the muscles, the straining of the ligaments, the increase in heart-rate (see James, 1880/1920, p. 154). Some of these movements could be performed at will (the movement of muscles), and some retained their automatic status (increases and decreases of heart-rate). James' insistence that it is the afferent sensations that are received when an act is performed, and that the mind concentrates on these afferent sensations when desiring that an action take place, marks the dividing line between James' theory of reflex action and Bain's.

The relationship between the physical and mental structures is interactive; movement is the result of feeling, and the intellectual life is 'secondary' to this basic process (see James, 1890, 2, p. 487): "we might say that every possible feeling produces a movement and that the movement is a movement of the entire organism, and of each and all its parts" (James, 1890, 2, p. 372). Many of the so-called psychological reactions are reducible to simple changes in the physical systems (see James, 1890, 2, p. 373), and James expanded this postulate into the theory of emotion. But the postulate has wider implications for the theory of volition; it is a long way, psychologically speaking, from an accelerated heart beat in response to a sudden shock, to the 'effortful' decision to believe in free will. What joins these

'feelings', or places them on the same psychological continuum is their ability to excite the same physical feelings whether the organism is acting or reacting. The stimulus may be an outer object which produces afferent effects in the individual and the 'reflex' response is 'felt' by consciousness as the afferent effects which are stimulated by the automatic movements. Similarly, any idea or impulse which takes command of consciousness, whether it be an instinctive impulse or a successful effort to hold an idea in consciousness against competing ideas, is eventually felt by consciousness as the afferent effects of the movements performed, for all dominant impulses must eventually be released into some sort of physical action according to James.

The organism is constructed so that certain stimuli incite automatic responses; many of these reflex reactions persist throughout the life of the individual in their original reflex form. These same reflex responses also develop into emotional expressions, in the sense that they are elicited by the cognitive meaning that is attached to the stimuli. The reflex movements also provide the foundations for the repertoire of voluntary responses that the organism learns to make in the presence of the stimulus, or learns to make in the presence of new stimuli which do not automatically elicit reflex responses. The reflexive movements serve two functions in James' theory; they provide the foundations for the repertoire of actions that can be willed and they also provide much of the 'vocabulary' of consciousness, for consciousness knows the world in part through the felt impact of the bodily movements upon the physical world.

Although James rejected the innervation theory in Bain's concept of volition, he used Bain's law of diffusion to express the relationship between feeling and the movements of the body. Movements are

consequences of 'cerebro-motor' changes, and all movements, whether they are reflexive, voluntary, instinctive, or emotional, can be physiologically related under the general dictum of Bain's law of diffusion which states that: "According as an impression is accompanied with Feeling, the aroused currents diffuse themselves over the brain, leading to a general agitation of the moving organs, as well as affecting the viscera" (Bain, quoted in James, 1890, 2, p. 372). James expresses Bain's law so that: "A process set up anywhere in the centres reverberates everywhere, and in some way or other affects the organism throughout, making its activities either greater or less" (James, 1890, 2, p. 381). The physiological concomitants of volition are constant; psychological distinctions (which describe the nature of the external or internal stimuli and the eventual response), account for variations in the nature of physiological arousal--that is, whether the heart-beat accelerates or decreases in response to the perception of the stimulus (see James, 1890, 2, pp. 373-374). These movements are not purposive or volitional--we do not run to produce an accelerated heart-rate. The physiological changes serve instead as signs or sensations which can eventually direct the organism towards purposive acts.

But some of the physiological movements provide the foundations for voluntary activities. James writes that:

> voluntary movements must be secondary, not primary functions of our organisms. ...Reflex, instinctive, and emotional movements are all primary performances. ...When a particular movement, having once occurred in a random, reflex, or involuntary way, has left an image of itself in the memory, then the movement can be desired again, proposed as an end, and deliberately willed. But it is impossible to see how it could be willed before (James, 1890, 2, p. 487).

This is an important statement for it limits volition in two ways. Movements are categorized according to whether or not they can be

willed and whether or not they can be willed is a physiological, not a psychological question:

> Now notice in all this, whether the act do follow or not upon the representation is a matter quite immaterial so far as the willing of the act represented goes. I will to write, and the act follows. I will to sneeze, and it does not. I will that the distant table slide over the floor towards me; it also does not. My willing representation can no more instigate my sneezing centre, than it can instigate the table, to activity. But in both cases, it is as true and good willing as it was when I willed to write. In a word, volition is a psychic or moral fact pure and simple, and is absolutely completed when the intention or consent is there. The supervention of motion upon its completion is a supernumerary phenomena belonging to the department of physiology exclusively, and depending on the organic structure and condition of executive ganglia whose functioning is quite unconscious (James, 1880/1920, pp. 190-191; see also James, 1890, 2, p. 560).

The fact that movements must first occur in a random involuntary way means that there are physiological limits on the possibilities for volitional acts requiring effort; James insists, in the context of his pragmatic theory of truth, that belief in metaphysical and ethical postulates has real, concrete consequences in the physical world (see Chap. 7). This means that ethical ideas actually have physical consequences; they are productive of particular movements, so that ethical possibilities are therefore restricted by physiological structures.

The Instincts

> Instinct is obviously further removed from purely physical life than is simple reflex action. While simple reflex action is common to the internal visceral processes and to the processes of external adjustment, Instinct is not. There are no instincts displayed by the kidneys, the lungs, the liver: they occur only among the actions of that nervo-muscular apparatus which is the agent of psychical life (Spencer, 1870, 1, p. 434).

The pre-volitional structures of action include movements and reflexes, instincts, and emotional expressions. The simple movements or reflexes are consequences of the organism's physiological structure; organs, muscles, etc., move and react in ways that are predicted by

the nature of the specific structures of the organs. The psychological consequences of this activity or movement are the feelings or sensations experienced by the organism. Physiologically and psychologically, these basic movements or reflexes constitute the base of the hierarchy of action.

The second level of the action pyramid is composed of the instincts. James defines instinct "as the faculty to produce certain ends, without foresight of the ends, and without previous education in the performance" (James, 1890, 2, p. 383). The instincts are therefore the "functional correlatives of structure. With the presence of a certain organ goes, ...almost always a native aptitude for its use" (James, 1890. 2, p. 384). The instincts are species-specific patterns of movement, individuated and determined by the physical structure of the individual and its 'ends' in the environment. Thus James says: "The actions we call instinctive all conform to the general reflex type; they are called forth by determinate stimuli in contact with the animal's body, or at a distance in his enviroment" (James, 1890, 2, p. 384). And, he adds, "Every instinct is an impulse. Whether we shall call such impulses as blushing, sneezing, coughing, smiling, or dodging, or keeping time to music, instincts or not, is a mere matter of terminology. The process is the same throughout" (James, 1890, 2, p. 385).

In treating instincts as reflex-type actions, James appears to be building his theory on Spencer's:

> Instinct may be described as...compound reflex action. ...no clear line of demarcation can be drawn between it and simple reflex action. ...the dirigo-motor processes which reflex actions show us, pass by degrees from the simple to the complex; ...recipio-motor processes do the like. Nevertheless we may conveniently distinguish, as a higher mode of these automatic nervous adjustments, those in which complex stimuli produce complex movements (Spencer, 1870, 1, p. 432).

James echoes this conception when he agrees with Spencer that instincts are complex actions, awakening several impulses towards action (see James, 1890, 2, p. 385). But this is the extent of his debt to Spencer. While James accepted Spencer's psychological reflex paradigm he emphasized the importance of the empirical findings of Darwin and Romanes in his work on instinct (see James, 1890, 2, pp. 394, 397, 420, 431, 432, 438). Romanes, as Young points out (see Young, 1970, p. 177), specifically supported Darwin's view of instinct over Spencer's and James was familiar with Romanes' arguments. The fundamental difference between Spencer's and Darwin's concepts of instinct was that Spencer tried to define instincts structurally as elaborations on reflexes, while Darwin defined them functionally as species-specific behaviours that should require learning but do not. James does not discuss the differences between Spencer's and Darwin's views in his chapter on instinct in the Principles, but he makes it clear in the last chapter of the Principles that he is a Darwinian regarding instincts:

> there is no good evidence for the belief that our instinctive reactions are fruits of our ancestor's education in the midst of the same environment, transmitted to us at birth. ...the features of our organic mental structure cannot be explained at all by our conscious intercourse with the outer environment, but must rather be understood as congenital variations, 'accidental' in the first instance, but then transmitted as fixed features of the race. ...'Accidental' in the Darwinian sense (James, 1890, 2, p. 618; see also James, 1890, 2, pp. 678-688).

James believed that Darwin had sound empirical evidence for his view that instincts are the result of "natural selection of accidentally produced tendencies to action" (James, 1890, 2, p. 638; see also Darwin, 1859/1977, p. 236). Darwin asserted that it would in fact "be the most serious error to suppose that the greater number of instincts have been acquired by habit in one generation, and then transmitted

by inheritance to succeeding generations" (Darwin, 1859/1977, p. 235; also quoted in James, 1890, 2, p. 683). Darwin had a 'plastic' view of the genesis of instincts. He had discovered that instincts were not universal even within the same species and he hypothesized that instincts evolved as the organism 'discovered' more 'successful' modes of coping with the environment (see Darwin, 1859/1977, pp. 241-242). Darwin was not implying that the process of discovery was a conscious process; instead, it appeared that members of the same species have several tendencies to act, and these tendencies may conflict. The cuckoo thus had the tendency to hatch her own eggs and the tendency to lay her eggs in the nests of other birds. The American cuckoo typically hatches her own eggs, and only occasionally lays them in the nests of other birds. The second tendency proved most beneficial to the European cuckoo and it 'hardened' into an instinct (see Darwin, 1859/1977, p. 242). Darwin argues that the empirical evidence suggests that many instincts are only imperfectly developed and uses this as evidence for his theory of natural selection. Through the process of natural selection, tendencies are solidified into instincts so that the behaviour of the organism becomes more recognizably instinctive (see Darwin, 1859/1977, pp. 242-243). Darwin also argued that instinctive behaviour is modifiable by will or reason, although instinctive acts may be performed in opposition to the will (see Darwin, 1859/1977, p. 235). Although he claimed that social feelings were instinctive in animals, and therefore like Spencer, claimed that evolutionary theory was compatible with moral behaviour in man (see Young, 1970, pp. 177-178), he does not dismiss the possibility of a conflict between will and instinct: "How unconsciously many habitual actions are performed, indeed not rarely in direct opposition to our conscious will! yet they may be modified by the will or reason" (Darwin, 1859/1977,

p. 235). Darwin also advances the argument that instincts could not be totally determined by inheritance for various species of insects have sterile, anatomically distinctive members which perform specific tasks in an instinctive way. Since direct inheritance of instincts is therefore impossible, the appearance of instinct in sterile insects must be controlled by natural selection (see Darwin, 1859/1977, p. 262).

Darwin's observations armed James with biological arguments against Spencer's evolutionary associationism, and he was therefore able to construct a psychological theory of instinct compatible with his insistence that consciousness is efficacious because it is selective. His debt to Spencer in particular, and to association psychology in general, was confined to the adoption of a reflex model: "The actions we call instinctive all conform to the general reflex type: they are called forth by determinate sensory stimuli in contact with the animal's body, or at a distance in his environment" (James, 1890, 2, p. 384).

Furthermore, he conceded that 'complex' instincts awaken the several impulses necessary to perform the action (see James, 1890, 2, p. 385). James therefore used the basic psychological reflex model to describe the means whereby mental impulses are translated into actions. But he transformed Spencer's mechanical reflex model into a structural model of action where the emphasis is on the means whereby a particular impulse is aroused in consciousness. Once the idea, thought, feeling, or impulse has gained ascendency in consciousness, action takes place by means describable by the mechanical theory of reflex action. Darwin's insistence that more than one tendency to respond in a given situation may exist in the organism's congenital repertoire meant, psychologically, that the response could not

necessarily be predicted from the stimulus. Darwin's legacy to James was a two-fold gift: first of all, a stimulus could arouse two conflicting tendencies to act, and second, Darwin tended to regard instincts as the eventual products of inherited "occasional and aberrant" habits (Darwin, 1859/1977, p. 242). James extended this notion into the conscious life of the organism so that the function of instincts was to promote habit formation.

Instincts as conflicting tendencies.

James takes exception to the view that man is distinguished from other animals by his lack of instincts and argues that man has more instincts than any other organism (see James, 1890, 2, pp. 389-390). As a species rises on the evolutionary scale, the number of impulses to action increases (see James, 1890, 2, p. 392). An instinctive reaction is therefore elicited through the interaction of the internal conditions of the organism and the complex conditions of the environment. The individual initially reacts to any new stimulus on an instinctive level. The particular instinct that is evoked is dependent upon a number of factors--the developmental 'phase' of the individual, his particular physiological condition at the time, and his previous accumulation of experience. The second time that the stimulus appears, however, the response is tempered by the memory of the previous experience with the stimulus. The individual reacts in terms of expectations about consequences or ends. If his past experience informs him that his first action led to desirable consequences he may repeat that response. If negative consequences have ensured--the child has previously grabbed the fatal candle and burned himself--his plastic capacity for different responses will ensure a new response: "every instinctive act in an animal with memory must cease to be 'blind'

after being once repeated" (James, 1890, 2, p. 390).

The function of instinct is to provide the organism with an in-built set of impulses towards activity in the multiple world of experience; the possession of instincts ensures interaction and activity--it also limits beforehand some of the possible dangers facing the uninitiated organism. By and large, instinctive impulses reduce the risks the individual faces in the external world (see James, 1890, 2, p. 392). James states that man must begin life as an amalgam of conflicting tendencies because his potential interactions with the world are so large and various. That plasticity of response inborn in man is his protection:

> There are more worms unattached to hooks than impaled upon them; therefore, on the whole, says Nature to her fishy children, bite at every worm and take your chances. But as her children get higher, and their lives more precious, she reduces the risks. Since what seems to be the same object may be now a genuine food and now a bait; since in gregarious species each individual may prove to be either the friend or the rival, according to the circumstances, of another; since any entirely unknown object may be fraught with weal or woe, Nature implants contrary impulses to act on many classes of things, and leaves it to slight alterations in the conditions of the individual case to decide which impulse shall carry the day. Thus, greediness and suspicion, curiosity and timidity, coyness and desire, bashfulness and vanity, sociability and pugnacity, seem to shoot over into each other as quickly, and to remain in as unstable equilibrium, in the higher birds and mammals as in man. They are all impulses, congenital, blind at first, and productive of motor reactions of a rigorously determinate sort. Each of them, then, is an instinct, as instincts are commonly defined. But they contradict each other--'experience' in each particular opportunity of application usually deciding the issue. The animal that exhibits them loses the 'instinctive' demeanor and appears to lead a life of hesitation and choice, an intellectual life; not, however, because he has no instincts--rather because he has so many that they block each other's path (James, 1890, 2, pp. 392-393).

James' psychological rationale for equipping the organism with contrary tendencies towards action is to ensure that the possession of instinctive tendencies per se does not automatically produce a stereotyped response pattern. The organism which possesses the most

instincts exhibits the greatest hesitancy in responding, and this inbuilt hesitancy provides the foundation for 'reasoned' assessments of what should best be done in any given situation. Reason and instinct are compatible:

> In other words, there is no material antagonism between instinct and reason. Reason, per se, can inhibit no impulses; the only thing that can neutralize an impluse is an impulse the other way. Reason may, however, make an inference which will excite the imagination so as to set loose the impulse the other way; and thus, though the animal richest in reason might be also the animal richest in instinctive impulses too, he would never seem the fatal automaton which a merely instinctive animal would be (James, 1890, 2, p. 393).

Habit formation and the instincts.[6]

Instincts have another function: most instincts are 'transient' structures "implanted for the sake of giving rise to habits" (James, 1890, 2, p. 402). Instincts are inhibited as habits develop, and James' law of inhibition is as follows: "When objects of a certain class elicit from an animal a certain sort of reaction, it often happens that the animal becomes partial to the first specimen of the class on which it has reacted, and will not afterward react on any other specimen" (James, 1890, 2, p. 394). The initial selection of any object inhibits the selection of other 'possible' objects of the same class so that the range of instinctive tendencies is restricted by habit formation to the extent that the organism may now appear to have never possessed the instinct at all (see James, 1890, 2, pp. 394-395).

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6. The psychological relationship between instinctive impulses and habit formation appears to originate with James. He does not credit any other theorist with deriving the particular principles of habit formation as they are based on instinct and he claims that his formulation provides an orderly explanation for behaviour that Romanes and Spalding regard as deviant (see James, 1890, 2, p. 394).

Instincts are also 'arrested' by habits when: "the same class of objects awakens contrary instinctive impulses. Here the impulse first followed toward a given individual of the class is apt to keep him from ever awakening the opposite impulse in us" (James, 1890, 2, p. 395). James cites Spalding's observations on 'imprinting' behaviour in chicks to illustrate his point. Newly hatched chicks will, in the absence of a hen, follow any moving object including man, without fear. But if the man appears for the first time a few days later when the fear impulse is dominant, the chicks will flee:

> The two opposite instincts relative to the same object ripen in succession. If the first one engenders a habit, that habit will inhibit the application of the second instinct to that object. All animals are tame during the earliest phase of their infancy. Habits formed then limit the effects of whatever instincts of wildness may later be evolved (James, 1890, 2, p. 397; see also James, 1890, 2, p. 396).

This pattern of development is related to what James calls the law of transitoriness which states that: "Many instincts ripen at a certain age and then fade away" (James, 1890, 2, p. 398). The pattern of habit formation is therefore determined by whether or not the organism encounters an appropriate 'object' at the time when the particular instinct can be aroused. If such an object is encountered, a habit is formed, which persists after the original instinctive impulse has faded away. If an appropriate object is not encountered, the habit will not be formed "and, later on in life when the animal meets the objects, he will altogether fail to react, as at the earlier epoch he would instinctively have done" (James, 1890, 2, p. 398).

Habit formation is a complex process; it depends upon the elicitation of instinctive responses by specific stimuli, and the corresponding appearance of an appropriate object at a time when the instinctive impulse is 'arousable' in the normal course of the animal's development (see Darwin, 1859/1977, pp. 236-237, 239-240). Spencer's

and Darwin's theories are combined in James' psychology to produce an interactive model of the developmental tendencies of the organism in relation to a plastic environment (see above, pp. 330-334). James' theory of instinct is therefore plastic in contrast to his rigid view of habit formation--this 'rigidity' is perhaps best exemplified in James' rather polemical statement on the importance of habit formation to the efficient maintenance of human society. He writes:

> Habit is thus the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor. It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deck-hand at sea through the winter; it holds the miner in his darkness, and nails the countryman to his log-cabin and his lonely farm through all the months of snow; it protects us from invasion by the natives of the desert and the frozen zone. It dooms us all to fight out the battle of life upon the lines of our nurture or our early choice, and to make the best of a pursuit that disagrees because there is no other for which we are fitted, and it is too late to begin again. It keeps different social strata from mixing. Already at the age of twenty-five you see the professional mannerisms settling down on the young commercial traveller, on the young doctor, on the young minister, on the young counsellor-at-law. You see the little lines of cleavage running through the character, the tricks of thought, the prejudices, the ways of the 'shop', in a word, from which the man can by-and-by no more escape than his coat-sleeves can suddenly fall into a new set of folds. On the whole, it is best he should not escape. It is well for the world that in most of us, by the age of thirty, the character has set like plaster, and will never soften again (James, 1890, 1, p. 121).

A rather strong statement for the mercurial James! But he ratifies it in his distinction between those skills which are acquired during the 'plastic' phase of instinctive curiosity and the attempts to learn new skills after the period has passed:

> Outside of their own business, the ideas gained by men before they are twenty-five are practically the only ideas they shall have in their lives. They <u>cannot</u> get anything new. Disinterested curiosity is past, the mental grooves and channels set, the power of assimilation gone. If by chance we ever do learn anything about some entirely new topic we are afflicted by a strange sense of insecurity, and we fear to advance a resolute opinion. But, with things learned in the plastic

> days of instinctive curiosity we never lose entirely our sense of being at home. There remains a kinship, a sentiment of intimate acquaintance, which, even when we know we have failed to keep abreast of the subject, flatters us with a sense of power over it, and makes us feel not altogether out of the pale (James, 1890, 2, p. 402).

The 'evanescent' or 'transient' nature of instinctive proclivities and the rapid rigidification of the tendencies into habits would appear to have a potentially stultifying effect on development. Wild takes a more positive view of habit formation, crediting James with a phenomenological approach to human instinct, and stating that original interests or impulses are developed through the application of habitual patterns of behaviour (see Wild, 1969, p. 249). Appropriate study habits facilitate intellectual development according to Wild because "habit takes over the original interest, which is maintained, but in ever-developing forms. The action becomes purposive, its objects ordered, and its operations enormously enriched and refined" (Wild, 1969, p. 249). Wild's argument is valid enough when habit formation is considered from the perspective of facilitating intellectual exploration. The growth of habits facilitates the continued pursuit of the original impulse, and activities are purposively directed towards the redefined goal. The problem is that James does not interpret habit information in this light as is shown above (see James, 1890, 1, p. 121, and James, 1890, 2, p. 402, quoted on p. 338). Furthermore, Wild does not give a discussion of what he describes as James' 'phenomenological approach' apart from his statement that James regarded certain reflex impulses as purely accidental, as having no survival value, and only rarely becoming autonomous structures.[7] From this we can assume that Wild means the theory of instinct is

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7. See Wild, 1969, p. 294. Wild is referring to James, 1890, 2, p. 402.

'phenomenological' because the child 'appears' to be ready to acquire distinctive intellectual skills at various stages in his development. This readiness to learn has its roots, according to James, in the child's instinctive curiosity about the world, and this 'curiosity' manifests itself in definite, perceivable ways (see James, 1890, 2, p. 402). Wild takes the child's readiness to learn as evidence for a phenomenological account because habit formation is the result of the attachment of purposive ideation and corresponding action to impulses which were originally non-purposive or fortuitously acquired.

The notion that not all instinctive impulses have survival value is important in James' theory, as Wild emphasizes (see Wild, 1969, p. 249). If James' psychology is to be conceived of as a structural unity, all impulses towards activity must be derivable from naturalistic sources. Some of the instinctive impulses appear to manifest themselves in ways which have no survival in 'modern society' but can be traced back through time to a point where they were of adaptive significance (see James, 1890, 2, p. 414, for James' examples with regard to remnants of the hunting instinct). Others--some of the 'fear' reactions--appear to have no practical utility at all and in fact may be detrimental to the individual:

> High places cause fear of a peculiarly sickening sort, though here, again, individuals differ enormously. The utterly blind instinctive character of the motor impulses here is shown by the fact that they are almost always unreasonable, but that reason is powerless to suppress them. That they are a mere incidental peculiarity of the nervous system, like liability to sea-sickness, or love of music, with no teleological significance, seems more than probable. [8]

Still other instincts, such as sympathy, have practical implications

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8. James, 1890, 2, pp. 418-419; see also James, 1890, 2, pp. 626-627, where James appears to place the accidental impulses into the back-door category, which separates them from those impulses which have teleological significance.

for the survival of the race although the individual following them may endanger his own safety (see James, 1890, 2, pp. 410-411). James allows that sympathy must be considered as an instinct (see James, 1890, 2, pp. 410-411), and his inclusion of sympathy as a natural or instinctive impulse potentially provides a naturalistic basis for the structuring of an evolutionary concept of morality.

Instinctive tendencies would now appear to derive from both the front and back-door processes of evolution and not all impulses seem to exist for the purpose of facilitating habit formation and adjustment to the internal and external demands. Whether these are true instincts is difficult to determine. It will be demonstrated in the next chapter that James did not use instinctive impulses as the foundation for his theory of ethics. Instead, he made a clear distinction between those impulses which were instinctive and those which arose fortuitously--and which were 'contrary' to the instinctive history of the race (see James, 1890, 2, p. 536). Front and back door tendencies appear to manifest themselves in two ways: most front door tendencies work to facilitate the efficient adjustment of the individual to the environment, while most back door tendencies are elicited by empirical events but do not have their true ends in efficient habit formation (see James, 1890, 2, pp. 626-627). Some front-door tendencies may be productive of 'moral' behaviour but their primary status is not moral. They are adaptive structures which have moral implications when they are contradicted by other impulses or when they arise in situations of extraordinary stress. "True" moral impulses are back-door tendencies, while many back door tendencies seem to be without adaptive or moral utility at all. James calls this last category of impulses instinctive because they are elicited in the same way that the 'productive' instincts are elicited.

But as the following pages will show, these impulses may, in some cases, be more properly treated as emotional expressions or reactions. Other impulses, such as the tendency towards sea-sickness, seem to have more in common with simple reflex reactions; their appearance in one individual and not in another is fortuitous and merely indicates that individual differences must be taken into account. The stategem of clarifying the status of the 'accidental' impulses has two advantages. It allows further clarification of the 'cognitive' nature of emotional expressions, and it allows James' earlier definition of the instincts to retain its meaning. James stated that instinct is "the faculty to produce certain ends, without foresight of the ends, and without previous education in the performance" (James, 1890, 2, p. 383). Being sea-sick, on the one hand, or paralyzed with fear, on the other, can hardly constitute 'ends' as the term is used in this definition. These 'impulses' may lead to habits of avoiding the events that trigger them, but these so-called habits have little in common with the productive or purposive chains of behaviour that emerge from the 'true' instincts.

The conflicts between instinctive tendencies have important implications for James' theory of volition with effort as will be shown in the next chapter. It is therefore necessary to select the most 'developed' definition of instinct so that correspondingly clear definitions of the other categories of impulses can be given. That the mind contains non-instinctive, but naturally determined impulses in addition to the instincts will be shown in the discussion that follows.

Emotional Expression

James' theory of emotion aroused a storm of critical comment

when he first published it in 1884 (see Perry, 1935/1974, 2, p. 92; see also James, 1894/1920, p. 346), and he appears to have had doubts about its credibility:

> We can define the pure psychic emotions far better by starting from such an hypothesis and modifying it in the way of restriction and subtraction, than by having no definite hypothesis at all. Thus will the publication of my article have been justified, even though the theory it advocates, rigorously taken, be erroneous. The best thing I can say for it is, that in writing it, I have almost persuaded myself it may be true (James, 1884/1920, p. 275).

Two months after the publication of "What is an emotion?" he wrote:

> I find that of my friends, the only ones to whom it seems plausible are the physiologists, and that is not necessarily a point in its favor. I must confess, however, that it grows rather more plausible to my own mind, the more I think it over (James, 1884, quoted in Perry, 1935/1974, 2, p. 92).

But James stuck by the theory, enlarged it, and included it in the Principles in 1890, and in 1894 he attempted to answer his critics in the paper "The physical basis of emotion". That the theory of emotion is one of James' most original contributions seems to be undisputed (see for example, Boring, 1950, p. 519; Perry, 1935/1974, 2, p. 89); Lange's independent version of the theory first appeared--in Danish--in 1885, and was translated into German in 1887 (see James & Lange, 1922, p. 6). This means that James could not have read Lange's version until 1887 so that his intellectual debts for the theory belong to other theorists, and as usual, these debts were substantial (see Perry, 1935/1974, 2, p. 89; see also Kraushaar, 1936, pp. 247-250).

James' view of emotion was, psychologically speaking, the most radical of his time and it initially appears to contradict many of the psychological principles he had already developed and was later to systematize in the Principles. James' doubts about the viability of the theory are significant; nowhere else does he express such

uncertainty about any of his psychological doctrines. His initial doubts are not unwarranted, for the theory of emotion is one of his most problematic statements, and whether he achieved his end of developing a view of emotion that is consistent with his other conceptions of consciousness, and whether the theory is in fact viable will be discussed below. More specifically, it will be shown that James substantially rejected a cognitive interpretation of the emotions, so that emotional reactions do not play any part in determining the individual's actions. James thus comes close to an epiphenomenalist account of emotion, and the dangers of epiphenomenalism are enhanced by the elementarism that is introduced when he attempts to construct a causal account of emotional arousal.

The theory of emotion must be discussed in the context of James' theory of action, because James insists that instincts (and therefore, presumably, other impulses towards action) cannot be separated from emotional accompaniments:

> Objects of rage, love, fear, etc., not only promote a man to outward deeds, but provoke characteristic alterations in his attitude and visage, and affect his breathing, circulation, and other organic functions in specific ways. When the outward deeds are inhibited, these latter emotional expressions still remain, and we read the anger in the face, though the blow may not be struck, and the fear betrays itself in voice and color, though one may suppress all other sign. Instinctive reactions and emotional expressions thus shade imperceptibly into each other. Every object that excites an instinct excites an emotion as well. Emotions, however, fall short of instincts, in that the emotional reaction usually terminates in the subject's own body, whilst the instinctive reaction is apt to go farther and enter into practical relations with the exciting object. [9]

The critical difference between emotional and instinctive reactions lies in their potential for entering into relations with the external

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9. (James, 1890, 2, p. 442; see also James, 1890, 2, p. 471). James claimed that moral and intellectual cognitions were also accompanied by emotions.

world. Emotional reactions terminate in the body of the individual and it is necessary to determine what their role is, if any, in inciting particular responses. In the above definition their status appears to be restricted to acting as accompaniments of other thoughts or actions (like the fringes of thought in the stream of consciousness).

Because James' theory of emotion proved so controversial, and because there appear to be major problems in integrating the theory with his psychological theory of the structures and functions of consciousness, it is necessary to recall that the theory is given in three versions. James' original statement is contained in his 1884 paper "What is an emotion?" Most of the 1884 paper was included in the Principles, and a comparison of "What is an emotion?" with the chapter on emotion in the Principles reveals that all of the major points of the theory were carried over into the Principles. In fact, much of the 1884 paper was simply reprinted verbatim in 1890 (see James, 1884/1920, p. 244). The version of the theory contained in the Principles expands and enlarges greatly on the 1884 paper: arguments are more fully worked out, and the theory is supported with more 'evidence'. Thus, the 1884 paper can be taken as a sketch of the theory, and for the sake of clarity we will concentrate on the version given in the Principles as the mature form of the theory.[10] But James' more sophisticated working out of the theory still did not satisfy his critics, and in 1894, James attempted a reply to his critics in a paper called "The physical basis of emotion". Several commentators believe that the expanded version of the theory of emotion given in the Principles is in fact a viable account of emotion, consistent with

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10. The Principles will therefore be taken as the primary reference. Overlap between the 1884 and 1890 versions of the theory will be indicated in the reference notes in the text.

James' overall construction of consciousness, and that their interpretation is supported by the 1894 paper. This interpretation of the theory of emotion is discussed below.

James' theory of emotional expression reverses the traditional paradigm whereby "the mental perception of some fact excites the mental affection called the emotion, and this latter state of mind gives rise to the bodily expression" (James, 1890, 2, p. 449; see also James, 1884/1920, p. 247). Basically, James' theory of emotion states that bodily changes follow immediately upon the perception or cognition of any exciting object. Emotions are the feelings of these bodily changes as they occur (see James, 1890, 2, p. 450; see also James, 1884/1920, pp. 247-248). Emotions are excited along with instinctive reactions to objects, but emotional expressions terminate in the body of the individual, while instinctive reactions often enter into 'practical relations' with the exciting object (see James, 1890, 2, p. 442). The entire body serves as a sounding-board for emotional excitement, and the range of the physiological changes that the body undergoes are so numerous that "no shade of emotion, however slight, should be without a bodily reverberation as unique, when taken in its totality, as is the mental mood itself" (James, 1890, 2, p. 450; see also James, 1884/1920, pp. 251-252). Should the individual try to imagine the presence of a strong emotion without its bodily manifestations, he would find that he had nothing left to contemplate (see James, 1890, 2, p. 451; see also James, 1884/1920, p. 255). Thus, James states, "each emotion is the resultant of a sum of elements, and each element is caused by a physiological process of a sort already well known. The elements are all organic changes, and each of them is the reflex effect of the exciting object" (James, 1890, 2, p. 453; see also James, 1884/1920, p. 268). No special brain-centres exist which are specifically

responsible for the generation of emotional expressions--the afferent sensations are sufficient to account for the whole range of emotional expression (see James, 1890, 2, pp. 472-474; see also James, 1894/1920, p. 370).

The most explicit, if the most problematic, statement of the theory is given as follows:

> My theory, on the contrary, is that the bodily changes follow directly the perception of the exciting fact, and that our feeling of the same changes as they occur is the emotion. Common-sense says, we lose our fortune, are sorry and weep, we meet a bear, are frightened and run; we are insulted by a rival, are angry and strike. The hypothesis here to be defended says that this order of sequence is incorrect, that the one mental state is not immediately induced by the other, that the bodily manifestations must first be interposed between, and that the more rational statement is that we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble, because we are sorry, angry, or fearful, as the case may be. Without the bodily states following on the perception, the latter would be purely cognitive in form, pale, colorless, destitute of emotional warmth. We might then see the bear, and judge it best to run, receive the insult and deem it right to strike, but we should not actually feel afraid or angry (James, 1890, 2, p. 450; see also James, 1884/1920, p.p. 247-248).

This statement essentially constitutes the 'strong' version of the theory of emotion and it is the statement which aroused so much critical furor; it describes what James calls the 'coarse' emotions "in which everyone recognizes a strong organic reverberation" (James, 1890, 2, p. 449). His critics objected to this statement on the basis that "Common sense would be likely to say that it was because we object to being eaten [that we run away]; but according to Professor James the reason we dislike to be eaten is because we run away".[11]

The essential criticism made by both Irons and Worcester was that James was claiming that it was not the cognitive appreciation

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11. Worcester, 1892, quoted in James, 1894/1920, p. 349; see also Irons, 1894, discussed in James, 1894/1920, p. 349. Irons makes substantially the same criticism as Worcester.

of the situation which engendered the emotional reaction; instead, James argued that the stimulus aroused reflex physiological changes in the individual which were then experienced as emotions. Moreover, Worcester pointed out that no particular stimulus excites one necessary reaction in the observer; rather, the reaction to the stimulus is determined by the relation of the observer to the stimulus--that is, caged bears do not provoke the response of running away.[12] James replied to the second criticism by stating that the misunderstanding was due to the "slapdash brevity of the language used" (James, 1894/1920, p. 351), in 1884 and 1890, and that he meant 'run' to stand for "many other movements in us, of which invisible visceral ones seem by far the most essential; [these movements] discriminate also between the various grades of emotion which we designate by one name" (James, 1894/1920, p. 351).

But the first criticism was more difficult to dismiss, and it was by far the more important. In both 1884 and 1890, James made the distinction between the 'coarse' emotions and the 'subtle' emotions. The coarse emotions and their arousal are broadly described in James' 'strong' statement of emotional expression quoted above (see James, 1890, 2, p. 450, quoted on p. 347). These coarse emotions are later contrasted with the arousal of the subtler intellectual, moral, and aesthetic emotions "whose organic reverberation is less obvious and strong.[13] In the case of the subtle emotions, bodily reverberations seemed to be entirely absent and the emotional reaction followed

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12. (See Irons, 1894, and Worcester, 1892, quoted in James, 1894/1920, p. 349). These criticisms have also been made by modern critics and will be taken up again below.

13. (James, 1890, 2, p. 449; see also James, 1884/1920, pp. 267-269). The distinction between the coarse and the subtle emotions is less explicitly worked out in the 1884 version of the theory but the general distinction does not change between 1884 and 1890.

immediately on the perception of the object, so that the individual experienced "genuinely cerebral forms of pleasure" (James, 1890, 2, p. 468). The experience of such immediate non-accompanied cerebral pleasures would invalidate the theory of emotion as a whole. The absence of bodily reverberation preceding the subtle emotional states--the immediate response to the object--would imply that the strong emotions were also directly aroused by the perception of the object instead of following upon the bodily reverberations (see James, 1890, 2, p. 468). But James argued that introspection revealed that bodily reverberations preceded the most subtle of the emotions (see James, 1890, 2, p. 471). And in 1894, he made it explicit that the subtle and the strong emotions were aroused in the same fashion; the distinction between the strong and subtle emotions was to be found in the intensity of arousal rather than in the mode of arousal (see James, 1894/1920, p. 370).

James claimed that both the coarse and the subtle emotions were essentially aroused by the afferent feelings excited by the presence of the object (see James, 1894/1920, pp. 358-360).[14] The 'pleasantness' or 'unpleasantness' of the content of the perception is due to these afferent sensations (see James, 1894/1920, p. 358). The resulting emotion is therefore the summation of the afferent feelings aroused in the individual for James claims that he can find nothing more in the experience of any particular emotion, subtle or strong, than its reduction to these physical sensations (see James, 1894/1920, pp. 359-360). Thus James concludes his 1894 paper with the statement that:

That part, if there be any, of emotional feeling which is

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14. James made this point implicitly in 1890 (see James, 1890, 2, pp. 468, 471), but it was not until 1894 that he specifically referred to the afferent feelings in relation to emotional expressions.

> not of afferent origin should be admitted to be insignificant, and the name "emotion" should be suffered to connote organic excitement as the distinctive feature of the state (James, 1894/1920, p. 370).

This statement is particularly important because it resolves the problem of accounting for James' motivation in constructing the theory of emotion along the lines he did. By making afferent sensations the basis of both the subtle and the coarse emotions, James was attempting to bring his theory of emotion into line with his basic theory of knowledge. The 1894 version of the theory therefore does not constitute a major revision of the theory--James in fact ratifies his theory of emotion in this paper. Instead, the paper is important because James makes the epistemological rationale of the theory more explicit than he had in either 1884 or 1890. The theory of emotion cannot therefore be viewed as existing in three separate versions; the 1884 paper sketches the broad outlines of the theory, while the Principles gives the theory in its most expanded and detailed version. Finally, the 1894 paper ratifies the theory and emphasizes the epistemological demands that the theory presumably met.[15]

So far, then, we have outlined the basic premises of the theory of emotion and indicated that the theory was not substantially changed between 1884 and 1894. We have yet to assess the theory and the problems it presents when taken in conjunction with James' broad theory of consciousness. Because the theory of emotion proved so problematic, it is logical to ask how he came to construct the theory in the first place; the answer lies in the influence of Lotze and Darwin. Their

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15. Because James presents the theory in its most detailed and expanded form in the Principles, the Principles will be used in the following discussion as the major statement of the theory and the 1884 and 1894 papers will be referred to in cases where they shed light on James' intentions in constructing the theory.

combined effect on James' thought will therefore be briefly discussed in order to clarify James' philosophical position before we turn to the specific criticisms of the theory and its implications for James' psychology and philosophy.

Lotze's influence and the influence of the British empiricists.

According to Perry, James' theory "that emotions are fusions of organic sensations aroused by bodily expression" (Perry, 1935/1974, 2, p. 89) was inspired by his reading of Lotze's Medicinische psychologie in 1867-1868. James made a note on his copy of Lotze's text that "Emotions due to bodily reverberation" (James, quoted in Perry, 1935/1974, 2, p. 89; see also Wiener, 1965, p. 116). Perry states that in spite of this, Lotze was not the primary influence on James' theory; that credit he believes, belongs to Darwin and traditional British empiricism (see Perry, 1935/1974, 2, p. 89). Kraushaar disagrees, claiming that:

> Nowhere in James' psychology is Lotze's influence so manifest as in the account of the emotions. The substance of the James-Lange theory, the emphasis on peripheral nerve action, the resonance theory of the relation of body and mind, and the denial of the existence of a separate cerebral center for emotions--all these typically Jamesian standpoints had already been achieved on a more or less speculative basis in Lotze's 'Medicinische psychologie' of 1852. James differs only in presenting his theory more emphatically and in a much more radical form (Kraushaar, 1936, pp. 247-248).

Kraushaar castigates James for his failure to acknowledge Lotze's profound influence,[16] and perhaps he is justified, for James does echo Lotze's theory as Kraushaar describes it (see James, 1890, 2, pp. 450-453, 472-474, in reference to Kraushaar's comment, 1936, pp. 247-248, quoted above). But James is primarily indebted to Lotze for the

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16. (See Kraushaar, 1936, p. 249; see also Titchener, 1914, p. 249). Titchener also criticizes James for failing to acknowledge Lotze's influence.

latter's rhetorical rejection of the theory of innervation and James does in fact acknowledge Lotze's work in his earlier paper, "The feeling of effort" (see James, 1880/1920, p. 154 for James' acknowledgement).

According to Kraushaar:

> James contended that the truly emotional elements of an emotion consist in the feeling of bodily responses to a given cognitive content. Any such content will "excite bodily changes...so indefinitely numerous and subtle that the entire organism may be called a sounding board, which every change of consciousness however slight, may make reverberate." Awareness of this disturbance constitutes the emotion proper; incoming nerve currents are thus the true physiological basis of the emotion (Kraushaar, 1936, p. 248; internal quote from James, 1890, 2, p. 450).

The feeling of any emotion relies upon the status of the afferent feelings; these are the feelings that constitute the emotion proper. These feelings are engendered upon the perception of the exciting object and they correspond to the felt sensations of the muscles and organs, moving in response to the perception. The bear is perceived and this perception triggers two responses: a feeling or cognitive idea that 'it is best to run' dominates the stream of consciousness, and once running is commenced, the individual experiences the afferent sensations produced by his movements. The perception simultaneously triggers the physiological reflexes of trembling, increase in heart-rate, etc., and the individual experiences 'fear'. All are afferent sensations. The individual does not have any feelings of innervation--that is, he has no awareness of the efferent currents responsible for the running, the trembling, or the increase in heart-rate. This is a fairly subtle point; the emotional expressions--that is, fear, anger, etc.--are not engendered by the object itself, but are products like the other feelings of movement, of the first effects of the stimulus on consciousness. The rejection of the theory of innervation is as

basic to the theory of emotion as it is to the development of James' ideo-motor paradigm.

Perry claims that James' theory of emotion owes more to the British empiricist tradition of philosophy than to Lotze because the British empiricist philosophers stressed "the receptive and cognitive aspect of mental content" (Perry, 1935/1974, 2, p. 89), so that James 'naturally' inherited his position. Perry's point is valid when the discussion is confined to the orthodox British tradition of philosophy. The distinction must be made, however, between the philosophical and psychological traditions in British empiricism and their effects on James. James never discusses his rejection of the theory of innervation in relation to the philosophical tradition of British empiricism. But he explicitly rejected Bain's, Lewes', and Hughlings Jackson's account of innervation; if innervation was not compatible with British empiricist philosophy, it had been incorporated into British empiricist psychology in the work of Bain, Lewes, and Hughlings Jackson (see James, 1880/1920, pp. 151-155). The critical difference between British empiricist psychology and James' theory lies in James' rejection of innervation; the mind knows the afferent, not the efferent, sensations that are produced when an impulse, idea, or feeling is discharged into movement, or when an emotional reaction is engendered, and this is the point that Perry seems to miss. Perry does agree that the theory of emotion is consistent with the rejection of innervation (see Perry, 1935/1974, 2, pp. 89-90). But in his efforts to link James with the so-called orthodox tradition of empiricism, he fails to note the fundamental incompatibilities between James' theory of emotion and the specific psychologies of empiricists. James gives a fairly long critique of the empiricist psychology in "The feeling of effort" (see James, 1880/1920, pp. 152-156, 206-219). If Perry believes that James

naturally inherited his particular notion of the role of afferent feelings, James certainly did not.

Darwin's influence.

But Perry is less concerned with the influence of Lotze or British empiricism on the development of the theory of emotion than he is with Darwin's role. According to Perry (see Perry, 1935/1974, 2, p. 89), and Wiener (see Wiener, 1965, p. 116), it was Darwin who exerted the most profound influence on James' development of the theory. Darwin gave a detailed biological account (see Darwin, 1873; see also Wiener, 1965, p. 116) of the emotions which concretized James' emerging view that all emotions could be considered as 'organic disturbances'. He was further influenced by Darwin's principle of natural selection so that: "Some emotional expressions are accounted for by the principle of natural selection 'as weakened repetitions of movements which formerly...were of utility to the subject'."[17] And James went further than Darwin in claiming that some emotional expressions had completely accidental origins, and therefore had no practical utility--such accidentally derived reactions formed the basis for man's aesthetic life for example (see James, 1890, 2, p. 484). The role of theorists such as Lotze and Henle (see Perry, 1935/1974, 2, p. 89; see also James, 1890, 2, pp. 461-462), was to provide firm physiological foundations for a 'valid' evolutionary account of the emotions given in psychological terms. Darwin's account--insofar as it was psychological--was based on the associationism of Bain, Mueller, and Spencer (for examples, see Darwin, 1873, pp. 27, 29, 31), and James

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17. (Wiener, 1965, p. 117; internal quote from James, 1890, p. 478). It should be noted that James also acknowledges Spencer's influence here.

believed that Darwin's reliance upon association psychology constituted the only major weakness in the theory.

Darwin was concerned with describing the ways in which the emotions manifested themselves as expressions; his account is largely a catalogue of the outward physiological changes that denote the appearance of recognizable emotions. Thus, surprise is characterized by a raising of the eyebrows which wrinkles the brow and causes the eyes to open wide, etc. (see Darwin, 1873, p. 278). Darwin wished to discover whether the expressions were universal amongst the human races. He also did comparative studies to show that some of the expressions were exhibited by animals, his theory being that emotional expressions were a product of evolution, and his observations appeared to confirm his theory. It is suggested then, that Darwin's influence on James was not altogether positive: James seems to have been so overwhelmed by the detailed evidence that he concentrated his attention on the physiological expressions of emotion to the detriment of their cognitive import.

The physiological basis of emotion.

James follows Darwin in calling the emotions expressions. An object elicits an impulse or idea towards a specific action in the perceiver. It also provokes physical changes in the body of the perceiver, and the sum of these changes constitute the emotional expression. The impulse to act and the emotional expression are not experienced separately in consciousness (see James, 1890, 2, p. 442), so that the most logical explanation of emotional arousal is that the perception of the object immediately engenders a 'mental' emotion which gives rise to the physical sensations of emotion (see James, 1890, 2, p. 449). But James rejects this interpretation. Instead, he argues that the

perception is followed immediately by bodily changes and the feeling of these afferent effects is the emotion (see James, 1890, 2, p. 449). James argues that physiological theories support his conclusion that there are no separate emotional centres in the cortex,[18] for if emotional centres are necessary, then: "we must deny the view that is current and hold the cortex to be something more than the surface of 'projection' for every sensitive spot and muscle in the body" (James, 1890, 2, p. 473). James then argues that his interpretation of the emotions is compatible with the sensory-motor model but it should be noted that his version of the sensory-motor model is based on the changes he made in the functional status of the afferent and efferent tracts:

> An object falls on a sense-organ, affects a cortical part, and is perceived; or else the latter, excited inwardly, gives rise to an idea of the same object. Quick as a flash, the reflex currents pass down through their pre-ordained channels, alter the condition of muscle, skin and viscus; and these alterations, perceived, like the original objects, in many portions of the cortex, combine with it in consciousness and transform it from an object-simply-apprehended into an object-emotionally-felt (James, 1890, 2, pp. 473-474).

Emotional reactions are 'achieved' and experienced in the same way that the feelings of effort (in 'voluntary' actions) are 'achieved' and experienced. The organism is active and reactive and the body serves as a "sounding board" (James, 1890, 2, p. 450),[19] for the cognitive and emotional states of consciousness; the afferent feelings provide the 'meaning' of the action and the reaction. But now the parallel between emotional expressions and ideas and the effects of their expression in movement breaks down. James distinguished

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18. Note Lotze's influence here (see Kraushaar, 1936, pp. 247-248, quoted above, p. 351).

19. Note Lotze's influence here (see Kraushaar, 1936, pp. 247-248, quoted above, p. 351).

emotions from instincts on the basis that instinctive impulses terminated in direct interaction with the objects which aroused them while emotional expressions terminated in the body (see James 1890, 2, p. 442, quoted above, p. 344). Emotions are not outwardly purposive; in fact, James' discussion concentrates upon the physiological aspects of emotion and bars them from any explicit cognitive import. Wiener states that: "Just as the positivists argued that a physical object is the totality of its sensible effects, so James has shown that an emotion is the totality of its organic manifestations" (Wiener, 1965, p. 116; see also James, 1890, 2, p. 452). This makes it difficult to analyze the 'cognitive' aspect of emotional expression. Peters notes that James "does not mean that the strictly emotional part of the emotion (its felt significance, its inwardness) is really physical or physiological" (Peters, 1962, p. 689). And James tries to make it clear that his sensationalist account of emotion does not diminish the worthiness, purity, or depth of the reaction so that the emotions "carry their own inner measure of worth with them" (James, 1890, 2, p. 453).

Reck, on the other hand, insists that "James's celebrated theory of the emotions exhibits most emphatically the physiological, behaviorist side of his psychology" (Reck, 1967, p. 25), and Watson admitted that the theory was adopted by most psychologists (see Watson, 1930/1961, p. 142). Watson deplored James' use of the introspective method to study emotion and claimed that by doing so, "James robbed psychology of perhaps its most beautiful and most interesting field of research" (Watson, 1930/1961, p. 142). Watson made this statement in 1930; obviously his contemporaries, who were not utilizing the introspective method by this time anyway, found enough in the theory to see it as compatible with Behaviourism. It is reasonable to conclude that Reck's

interpretation of the meaning of the theory for modern psychology at least, is correct.[20]

In spite of James' assertion that the quality of emotional reactions is not 'touched' by the sensationalistic causal account he gives of the emotions, the 'cognitive' aspect of emotion is still difficult to define. Wild, however, believes that James' theory of emotion is both internally viable and consistent with his broad construction of consciousness. Wild recognizes (in his discussion of the 1890 version of the theory) that James gives primacy to the bodily responses, thus appearing to eliminate cognitive meaning from emotional expression, and that this is a potential problem with the theory (see Wild, 1969, p. 251). James states that certain stimuli immediately provoke physical sensations which are then experienced as emotional reactions (see James, 1890, 2, p. 450, quoted above, p. 347). This overt position is dangerously close to the epiphenomenalism that James had reacted so strongly against in his construction of consciousness. But Wild claims that James has already taken steps to ensure that his theory cannot be given an epiphenomenalist interpretation. Wild argues that the interpretation placed upon the 'strong' version of the theory is compatible with James' broad construction of consciousness. He notes that "James makes it clear that emotions are often excited by objects with which we have no practical dealings" (Wild, 1969, p. 251; see also James, 1890, 2, p. 442). These objects

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20. Psychologists basically accepted James' theory of emotion until 1929 when Cannon successfully refuted it (see Robinson, 1972, p. 231). While James was not a Behaviourist, his theory of emotion was compatible with the Behaviourist paradigm as it emerged in the early years of the twentieth century. It is worth noting that the theory of emotion was the only one of James' psychological theories that was explicitly adopted by the emerging Behaviourist movement, and it was adopted because it was heavily physiological, non-cognitive, and reductionist in construction.

would not, therefore, arouse emotion on a purely instinctive or reflexive level; they could arouse emotion only in the context of their 'meaning' for the individual (see Wild, 1969, p. 251). Furthermore, Wild points out that the stimulus must be perceived before the individual reacts emotionally to it, and the fact that perception precedes emotional expression necessarily means that the object engenders the emotion because of its meaning for the individual (see Wild, 1969, p. 251; see also James, 1890, 2, p. 449). These measures are sufficient to protect James from the charge that his theory of emotion introduced epiphenomenalism into his broad account of consciousness. They are not sufficient, however, to constitute a cognitive interpretation of emotion as will be shown below.

Linschoten, like Wild, believes that James' revised formula takes the cognitive aspects of emotion sufficiently into account:

> The stimulus for bodily changes that is experienced as an emotion is not simply a thing or happening; it is a situation. The emotion is not the observation of the resonance to the meaning of things; that meaning depends on the situation in which they appear (Linschoten, 1968, p. 283).

Finally, both Wild and Linschoten believe that James' use of the term feeling as a generic name for all psychic states rescues the theory: "Emotion is that name for a special kind of feeling in which bodily changes are particularly evident" (Wild, 1969, p. 253; see also Linschoten, 1968, pp. 283-284). Wild believes that James gives a primary role to what he (Wild) calls the living body. Emotional reactions relate objects "to the bodily subject" (Wild, 1969, p. 253), and thus provide consciousness with cognitive knowledge about the world.

The problem with this interpretation is that the fact that the individual has to be aware of the exciting stimulus at some level

before the physiological changes take place is not the issue here. The problem comes in determining the possible role that the physiological changes, and hence the emotions, play in determining the response that the individual makes to the exciting stimulus. James' broad paradigm implies that the response is determined on the cognitive level--the perception of the bear excites the idea of running--but the emotional reaction of fear accompanies the idea, rather than playing any part in the selection of the response. Fear of the bear is not part of the cognitive response to the percept of the bear; it accompanies the cognitive response. Emotions would appear to have their genesis in the immediate reverberations set up in the body when the stimulus is perceived. In this sense, the reverberations must constitute bodily 'actions' which are made in response to the idea in consciousness. These reverberations, in turn, are summed up into what is experienced as the particular emotional expression. Thus, Linschoten's argument that the meaning of the reaction depends on the situation in which the reverberations are excited is unsupported, nor does it allow the conclusion that James developed a cognitive theory of emotion. The emotional expression does not excite action--it is the product of action. James was to repeat again and again that feelings exist for the sake of action, that feelings discharge themselves in action, and that actions are determined by the presence of particular feelings or ideas dominating the stream of consciousness. The theory of emotion appears to reverse this paradigm because emotional feelings have no role in determining actions, but are by-products of physiological arousal. It is because emotional expressions appear to have this anomalous status as by-products of physiological arousal that James comes very close to incorporating a rather dangerous epiphenomenalism into his theory of consciousness.

Emotions, as mental states, are nothing more than the collective offspring of afferent sensations. They are the means through which the mind 'knows' what is happening physiologically, but they are barred, by definition, from determining actions.

Unlike Wild and Linschoten, Wilshire does not feel that the problems with the theory of emotion are easily resolved. He uses the theory of emotion as a demonstration that there are two opposing strands in the Principles and sets out to show that there is a conflict between James' tendency to "treat thought as a psychical existent specifiable in its own terms" (Wilshire, 1968, p. 211) correlatable to brain states, and his recognition that he must first specify the relationship of the object of thought to the physical world (see Wilshire, 1968, p. 211). James, according to Wilshire, is prevented from achieving a theory of emotion wherein the emotional reactions are cognitively related to the world, because he insists on advancing a causal theory of emotion (see Wilshire, 1968, p. 213; see also James, 1890, 2, p. 453). And James' corresponding disregard for the classification of emotional states undermines both his attempt at describing the mental experience of emotion, and the relationship of emotional reactions to the objects that provoke them. Wilshire rightly remarks that:

> An emotion like fear refers beyond the body to what we are emotional about. We are not thinking about the palpitations of our heart, or the sickening lump in our stomach when we face a wild beast; we are thinking about the wild beast--we believe it to be there (Wilshire, 1968, p. 214).

Wilshire's statement must not be confused with Linschoten's. Linschoten believes that the theory of emotion is valid as long as James allows the emotion to be determined by the meaning of the situation so that the emotion is the 'resonance' of the meaning in consciousness (see Linschoten, 1968, p. 283). This would mean that

emotions could be conceived of as comparable to the fringe states of ideas; the difference is that they are felt as physical sensations. Wilshire questions the validity of such an appraisal; the physical and mental expressions must be, he believes,directed towards the object. He then extends his criticism to James' argument that the sensational nature of emotion does not negate the spiritual worth of the emotion. Wilshire correctly points out that James cannot validate this claim unless he revises his definition to allow an emotion to be more than a "feeling of bodily disturbances" (Wilshire, 1968, p. 215). Wild and Wilshire agree that James' insistence on developing a causal theory of emotion works to the detriment of his concentrating on the meaning of emotion. But Wild feels that James' qualifications are successful while Wilshire does not.

Wilshire is concerned with James' failure to construct a theory of emotion whereby the emotions are cognitively related to the objects which arouse them. This is an important omission in an evolutionary theory of emotion, for presumably the major function of the emotional reactions is to enhance the cognitive appreciation of reality. Thus, emotional reactions should be described in terms of the characteristics of the stimulus which provokes the reaction, and they should also be describable in psychological, rather than in physiological terms. Wilshire claims that when we see the bear and are afraid, we are thinking about the bear; we are not thinking about the fact that our heart-rate has increased. Should we be asked to give a report on our state of mind by a bystander, we would most likely reply that we were afraid of the bear. Fear of the bear would be included in the thought of the bear.

And it is precisely this aspect of the emotional reaction--that is, the cognitive experience of affect--that is completely disregarded

in James' account. James is no longer treating thought as a 'psychical existent' which correlates with physiological arousal. Instead, the emotions are characterized as the sums of felt physiological changes and the distinction James insisted on between mental experience and underlying physiological activity in his original construction of consciousness (see Chap. 3, pp. 142-148), has been abandoned. Afferent sensations--which are combined here as emotional expressions--have no definable implications for action; actions are instigated by ideas or thoughts about performing specific actions, so that running away from the bear is mediated by the dominance of the thought of running in the stream of consciousness.[21] When emotions are given as the sums of physiological changes without any attempt to define a corresponding cognitive structure or function for them, emotions cannot logically have any role in determining the course of action the individual will take in response to the stimulus. Wilshire is therefore correct in criticizing James for his refusal to relate emotional arousal to the exciting object and for his insistence on concentrating on the physiological mechanism of emotion.

Were James' theory of emotion to be constructed so that it was an extension of his stream of consciousness theory, he would have had to claim that the fear that follows the initial perception of the exciting object is a definable feeling--'fear' of the bear--rather than a collection of afferent sensations which are eventually summed together as fear, or anger, or ecstasy. Fear as a cognitive appreciation of the situation would then have implications for the action that followed. Similarly, the absence of fear would have implications for action.

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21. The mechanics of the translation of thoughts into movements is discussed below in the section dealing with ideo-motor action.

If we were to encounter the beast while alone in the woods and did not experience fear in response to the perception, the action that was subsequently taken would quite likely differ from the action that was taken when we were 'afraid', and James makes this quite clear in his discussion of fear as an instinct (see James, 1890, 2, p. 417). It is significant that in his analysis of fear as an instinct, he concentrates on the nature of the fear-arousing objects themselves, so that the instinctive reaction is 'explained' in terms of the organism's cognitive state and his relationship to the world (see James, 1890, 2, pp. 415-422). It was hypothesized (see above, pp. 340-342), that the ambiguities of what James meant by instinct could be resolved if the non-adaptive fear-responses were to be treated as emotional reactions. This would have the advantage of ensuring the James had a consistent definition of instinct.[22] It would also mean that emotional reactions could be defined as feelings[23] which were elicited by particular objects or events. The physiological accompaniments of emotion would then have the same relationship to the emotion in consciousness as the afferent tactile sensations aroused by sensible objects, have in relation to the thoughts about these objects that are aroused in consciousness.[24] But James did not pursue this alternative; instead he set out to develop a causal theory of emotion (see Wilshire, 1968, p. 213; see also James, 1890, 2, p. 453). And in his attempt to develop a causal theory of emotion, James blatantly based the theory on an elementaristic analysis of sensation. James writes:

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22. Instincts could be consistently defined as the ability to produce certain ends without foresight or education in the production (see James, 1890, 2, p. 383).

23. See Chap. 3, pp. 135-138 for James' definition of feelings or thoughts.

24. See Chap. 4, pp. 239-258 on granting reality to sensory objects.

> each emotion is the resultant of a sum of elements, and each element is caused by a physiological process of a sort already well known. The elements are all organic changes, and each of them is the reflex of an existing object (James, 1890, 2, p. 453).

This is an astonishing statement considering James' vehement opposition to elementarism in earlier chapters of the Principles (see Chap. 3, pp. 138-141). James is attempting to relate emotional states directly to the body of the individual.[25] But he does so in such a way that emotions are reduced to bodily sensations which, in themselves, cannot have specific cognitive meanings. The flow of tears which follow the entry of a particle of dirt in one's eye is produced automatically or reflexively; the 'cause' is 'given' in the interaction between physiological structures and the environment (see James, 1890, 1, pp. 12-13). But tears also flow on occasions of grief, or conversely, on occasions of joy or aesthetic inspiration (see James, 1890, 2, pp. 444, 470). The exciting stimuli in these examples are qualitatively distinct, and the flow of tears itself is 'meaningful' only when considered as part of the reaction to the exciting stimulus. Instead, James states that: "the genesis of an emotion is accounted for, as the arousal by an object of a lot of reflex acts which are forthwith felt" (James, 1890, 2, p. 454). This statement is consistent with James' definition of conscious thoughts only if he allows that it is the particular combination or patterning of the reflex acts that is significant, so that tears, again, can be part of qualitatively different emotions depending on what other reflexes are concurrently elicited. Even so, the combination must be granted properties of its own beyond those of its constituent elements; it is the unitary cognitive 'feeling'

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25. As both Wild and Wilshire point out (see Wild, 1969, p. 251; see also Wilshire, 1968, p. 213, where Wilshire writes: "James again regards the body in an 'atomized' way").

of the emotional state that is important. We feel sad, joyful, afraid; we do not 'feel' or 'connate' the arousal of a lot of reflex arcs.

James does intimate that such a 'fusion' of the reflex arousals takes place when he writes that:

> particular perceptions do produce wide-spread bodily effects by a sort of immediate physical influence, antecedent to the arousal of an emotion or emotional idea...If we abruptly see a dark moving form in the woods, our heart stops beating, and we catch our breath instantly and before any articulate idea of danger can arise (James, 1890, 2, p. 457).

It appears that there are two parts to emotional expression; these are the immediate bodily changes which occur with the percept; and their 'formalization' into a particular emotion concurrent with action. But James does not develop the latter aspect of the theory. Instead he concludes that:

> If our hypothesis is true, it makes us realize more deeply than ever how much our mental life is knit up with our corporeal frame, in the strictest sense of the term. Rapture, love, ambition, indignation, and pride, considered as feelings, are fruits of the same soil with the grossest bodily sensations of pleasure and of pain (James, 1890, 2, p. 467).

and in regard to the 'subtler' emotions he writes:

> As far as these ingredients of the subtler emotions go, then, the latter form no exception to our account, but rather an additional illustration thereof. In all cases of intellectual or moral rapture we find that, unless there be coupled a bodily reverberation of some kind with the mere thought of the object and cognition of its quality; unless we actually laugh at the neatness of the demonstration or witticism; unless we thrill at the case of justice, or tingle at the act of magnanimity; our state of mind can hardly be called emotional at all. It is in fact a mere intellectual perception of how certain things are to be called--neat, right, witty, generous, and the like. Such a judicial state of mind as this is to be classed among awareness of truth; it is a cognitive act. As a matter of fact, however, the moral and intellectual cognitions hardly ever do exist thus unaccompanied (James, 1890, 2, pp. 470-471).

This seems to be James' last word (in the Principles) on the subject of the relationship between emotion and cognition. We are therefore

forced to conclude that he meant to leave the emotional reactions as the physiological accompaniments of thought; this conclusion is supported by his summary statement in the 1894 paper: emotional feelings are afferent in origin and:

> That part, if any, of emotional feeling which is not of afferent origin should be admitted to be insignificant, and the name "emotion" should be suffered to connote organic excitement as the distinctive feature of the state (James, 1894/1920, p. 370).

James hereby ratifies his causal elementarism and denies the emotions cognitive status in consciousness.

Emotional reactions do not form a distinct level of James' structural hierachy of action. They are not, as James describes them, impulses towards specific movements (see Kuklick, 1977, p. 185), and their influence on ideation is not sufficiently well defined to allow them a describable psychological role in 'deciding' upon appropriate action. Emotional reactions are induced by perception and are strengthened or diminished depending upon the cognitive response that is initiated.[26] Emotional expressions accompany ideas about the world and they accompany the actions initiated by impulses or thoughts about reality. They are found as 'accompaniments' on every level of the action hierarchy. Moreover, they terminate in the body of the individual so that they are 'products' like movements, and are accordingly 'experienced' in the same way that voluntary and involuntary movements are experienced in consciousness.

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26. (See James, 1890, 2, pp. 450, 463). James qualifies this view to some extent by stating that the repression of emotional reactions in certain personalities may lead to a general diminished responsiveness or to a more violent expression of the repressed passion when it is once again aroused by the stimulus (see James, 1890, 2, p. 467). However, these examples are restricted to the manifestation of the emotional reactions themselves; the reactions are not linked with other cognitive approaches to reality.

The major implication that the theory of emotion has for the broad assessment of James' psychology is that James' theory of consciousness is based entirely on cognition. Thoughts or ideas in consciousness are accompanied by emotional expressions, but the affective feelings are barred from any efficacious role in determining the individual's actions. This does not mean that James' attempt to create a unified theory of consciousness (as outlined above in Chap. 3) is nullified by the problems with the theory of emotion. Had James attempted to give the collection of afferent sensations which comprise the emotional expressions a role in determining what action the individual will take, the unified theory of consciousness would be placed in jeopardy, for feelings or ideas in consciousness would be given two different and opposing structures. As it is, emotions are experienced simply as collections of afferent feelings and these feelings are given the same status as the other afferent feelings which are stimulated by the presence of physical objects and events. As such, they provide information about the world that may eventually have effects on the production of ideas in the mind. More often, they are expressed as the reflex movements that result (like instinctive or habitual reactions) when certain ideas dominate consciousness. They are <u>not</u> expressed as feelings or ideas in the mind.

James' failure to provide a mental or cognitive definition of emotion in consciousness (as the parallel of the afferent feelings of emotion experienced in the body) presents problems in accounting for the motivational questions of <u>why</u> one particular course of action is selected over another. His theory of action is based on the principle that action immediately and automatically results when one idea gains control of consciousness over competing ideas in consciousness. The selection of one idea over another, the mechanisms which determine

how one idea gains precedence over another, are therefore vital issues in the construction of a cognitively based theory of action. These issues are particuarly important when we come to look at James' theory of volition with effort, where the selection between ideas competing in consciousness is critical in determining whether the resulting action is based on volition with effort, or whether it belongs to the habitual, or ideo-motor category of activity. Furthermore, the introduction of a causal elementarism into James' theory of mind has dangerous implications. It strengthens or supports the reflex interpretation of actions which are performed without volitional effort, so that the foundations of James' theory of action incorporate many of the elements of the older psychology that he claimed he was opposing in his definition of feelings or thoughts and his construction of the stream of consciousness. James barely manages to avoid introducing a dangerous epiphenomenalism into his theory of mind when he makes the emotions into sums of physiological elements. He avoids an epiphenomenalist account of emotion only because he insists that emotional expressions are elicited by cognitive perceptions and as such are the end products, akin to other bodily movements, of ideas in consciousness.

Finally, in constructing his metaphysical theory of radical empiricism, James used the theory of emotion to support his contention that thoughts and things are made of the 'same stuff'. He argued that affections were not wholly mental phenomena but were experienced physically as well (see James, 1905/1967c, pp. 137-189). This in turn led him to suspect that a panpsychist account of the universe might be inevitable, and prevented him from making head-way in constructing a theory of the physical universe which was compatible with his original theory of the stream of consciousness. (This problem is taken up

in more detail in Chaps. 8 and 9).

Ideo-motor Action

Ideo-motor actions make up the next level of the structural hierarchy of action, and James gives a precise definition of what an ideo-motor act is: "Whenever movement follows unhesitatingly and immediately the notion of it in the mind, we have ideo-motor action" (James, 1890, 2, p. 522). The necessary and sufficient condition for an ideo-motor act is the uncontradicted presence of an idea in the mind of what that act is to be; no special fiat or exertion of the will is involved (see James, 1890, 2, p. 522). Ideo-motor actions are simple, common and uncomplicated because they do not require a special fiat for their implementation; nevertheless, they are voluntary actions (see James, 1890, 2, p. 522). This is the major distinction between ideo-motor actions and reflex actions, instinctive impulses, and emotional reactions; ideo-motor action involves foresight of ends (see James, 1890, 2, pp. 486-487), and is the end result of a complex developmental process:

> As we must wait for the sensations to be given us, so we must wait for the movements to be performed involuntarily, before we can frame ideas of what either of these things are. We learn all our possibilities by the way of experience. When a particular movement, having once occurred in a random, reflex, or involuntary way, has left an image of itself in the memory, then the movement can be desired again, proposed as an end, and deliberately willed. But it is impossible to see how it could be willed before (James, 1890, 2, p. 487).

This means that "voluntary movements must be secondary, not primary functions of our organism" (James, 1890, 2, p. 487). Reflex and instinctive reactions leave 'ideas' of the particular movements in the memory, and these involuntary performances provide the basic structures for voluntary activity (see James, 1890, 2, p. 488). The

material for future voluntary actions is constituted out of sensory data gained during the period of involuntary experience. How an act looks, feels, sounds, when performed by someone else is stored in the memory, and when we come to perform the action ourselves, "another set of impressions, those, namely, which come up form the parts that are actually moved" (James, 1890, 2, p. 488) are stored in the mind as "kinaesthetic impressions" (James, 1890, 2, p. 488). James concludes--on the basis of his studies of anaesthetic subjects (see James, 1890, 2, pp. 489-492)--that:

> whether or no there be anything else in the mind at the moment when we consciously will a certain act, a mental conception made up of memory-images of these sensations, defining which act it is, must be there (James, 1890, 2, p. 492).

James argues (specifically in opposition to the theory of innervation) that these "images of peripheral sensations" (James, 1890, 2, p. 494, see also James, 1890, 2, p. 501), are all that is required to elicit the movement. We are not conscious of the efferent machinery that translates the uncontested idea into movement.

The nature of the ideas which 'provoke' movement is therefore the determinative aspect of movement and it is necessary to discover more precisely what kind of ideas these are. Moore claims that there is no evidence for the notion that voluntary movements are 'caused' by kinaesthetic images. He also claims that only certain ideas can be shown to have demonstrable motor consequences (see Moore, 1924, p. 330, quoted in Fearing, 1930/1964, p. 249). James does not deny this. He says that the ideo-motor paradigm is not a self-evident truth precisely because "we have so many ideas which do not result in action" (James, 1890, 2, p. 525). But Moore's criticism is not altogether unwarranted when he says that kinaesthetic images per se cannot be shown to cause voluntary movements, for James' statement that

kinaesthetic images are sufficient elicitors of movements is not altogether consistent with his examples of ideo-motor actions.

Kuklick states that the "mental conception...was both a "kinaesthetic idea and an inner entity, a mysterious intellectual phase" (Kuklick, 1977, p. 186). While James himself does not include a 'mysterious intellectual phase' in his description of the parameters of the ideas which initiate ideo-motor acts, his examples are consistent with Kuklick's statement. Three examples of ideo-motor actions have therefore been selected to show that there are at least three 'types' of ideas which can initiate ideo-motor actions. These examples will be referred to as cases one, two and three in the discussion that follows. 'Case one' type actions are exemplified by this example:

> Whilst talking I become conscious of a pin on the floor, or some dust on my sleeve. Without interrupting the conversation I brush away the dust or pick up the pin. I make no express resolve, but the mere perception of the object and the fleeting notion of the act seem of themselves to bring the act about (James, 1890, 2, p. 522).

This contrasts with the type of ideas which generate ideo-motor actions of the 'case two' variety:

> But whenever a movement is difficult and precise, we become aware in advance of the amount and direction of energy which it is to involve. One has only to play tennis or billiards, or throw a ball, to catch his will in the act, as it were, of balancing tentatively its possible efforts, and ideally rehearsing various muscular contractions nearly correct, until it gets just the right one before it, when it says 'Now go!' (James, 1890, 2, p. 493).

Finally, the 'third case' of ideo-motor actions is exemplified by James' famous example of the struggle involved in getting out of bed on a cold morning. The 'problem' is resolved as follows:

> Now how do we ever get up under such circumstances? If I may generalize from my own experience, we more often than not get up without any struggle or decision at all. We suddenly find that we have got up. A fortunate lapse of consciousness occurs; we forget both the warmth and the cold; we fall into some revery connected with the day's life, in the course of which the idea flashes across us, "Hollo!

> I must lie here no longer"--an idea which at that lucky instant awakens no contradictory or paralyzing suggestions, and consequently produces immediately its appropriate motor effects. It was our acute consciousness of both the warmth and the cold during the period of struggle, which paralyzed our activity then and kept our idea of rising in the condition of wish and not of will. The moment these inhibitory ideas ceased, the original idea exerted its effects (James, 1890, 2, pp. 524-525).

All three cases are examples of ideo-motor action because in each case there is no special fiat of the will which precedes the enactment of the idea. These are not simple reflex actions nor are they instinctive reactions for their 'ends' are not blind; they are performed purposively with a pre-determined goal in consciousness and these goals or ends are determined within the developmental process. Case two illustrates James' principle that the notion of specific kinaesthetic ideas is sufficient to ensure the performance of the action. But some kind of extra-ideation must be present as well--some purpose or intention of performing the action at all is necessary. In this case, the rationale for throwing the ball might serve as the 'fringe' which accompanies the kinaesthetic idea.

Cases one and three are distinguished from case two because in these cases, the kinaesthetic ideas do not appear to dominate the idea of the action. The perception of the pin or the dust seems to call for the removal of the object, and whatever kinaesthetic ideas are involved do not seem to be part of 'conscious' thought. The kinaesthetic components may form the fringe of the idea, but the idea itself does not seem to be fully 'worked out' in consciousness so that working out its components can be done only at a very speculative level. The perception of the pin or the dust carries enough 'intentionality' for the observer to remove them without disrupting the flow of conversation. In any event, there do not seem to be any rigorously

formulated notions of kinaesthetic ideas in these instances. Case three, the example of getting out of bed on a cold morning, is presented without any reference to kinaesthetic ideas at all. The simple "I must lie here no longer" (James, 1890, 2, p. 524), is sufficient to prompt the act of getting up. Whatever kinaesthetic ideas are present are obviously 'fringe' accompaniments to the general idea in consciousness. An ideo-motor idea would seem to consist, in some cases, of kinaesthetic ideas; in other cases, of an uncontested percept; and finally, in others, of a purposive idea alone. In each case, the 'idea' consists of more than a simple amalgam of kinaesthetic ideas thus fulfilling Kuklick's criteria.[27] Moore's criticism is also validated to the extent that James' statement that kinaesthetic ideas are all that are necessary seems to be contradicted by James' own examples. It is of course possible that what James meant by a kinaesthetic idea was precisely the kind of intentionality described above. Kuklick believes that the diverse theoretical commitments James made were responsible for the dual image of ideo-motor ideas:

> Although this notion might not be consistent with his description of the physiological organism, the existence of this peculiar kind of image was, I think, a consequence of James's joint commitment to the dualism of the automaton theory and an ulterior idealism; it assumed that the motor theory of consciousness did not reduce mind to behavior (Kuklick, 1977, p. 186).

The structure and function of ideo-motor actions must therefore be discussed in relation to the reflex basis for action, habit formation, and finally, James' ultimate rationale for disputing the validity of innervation if a clear picture of what James meant by ideo-motor

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27. Kuklick does not expand his statement on the nature of ideo-motor ideation and the above is an attempt to analyze James' theory in terms consistent with Kuklick's statement.

action is to emerge.

The Reflex Basis for Action

The structural paradigm for all types of action is the reflex model. Thus James writes:

> Movement is the natural immediate effect of feeling, irrespective of what the quality of the feeling may be. It is so in reflex action, it is so in emotional expression, it is so in the voluntary life. Ideo-motor action is thus no paradox, to be softened or explained away. It obeys the type of all conscious action, and from it one must start to explain action in which a special fiat is involved (James, 1890, 2, p. 527).

The only phenomena that can inhibit the movements which immediately follow an idea's appearance in consciousness are conflicting ideas. The nervous system is a balance between currents; nervous impulses to move the muscles are sustained or inhibited by other nervous impulses (see James, 1890, 2, p. 527), so that the nervous system is in a constant state of activity. The sustaining and inhibiting nature of its activity is governed by consciousness because:

> A priori analysis of both brain-action and conscious action shows us that if the latter were efficacious it would by its selective emphasis, make amends for the indeterminateness of the former; whilst the study a posteriori of the distribution of consciousness shows it to be exactly such as we might expect in an organ added for the sake of steering a nervous system grown too complex to regulate itself (James, 1890, 1, p. 144).

The relationship between mind and the nervous system is such that any uncontradicted idea therefore results in immediate movement.[28] Mechanically or physiologically speaking, there is no difference between voluntary and non-voluntary impulses so long as they are uncontradicted. Given James' rigid adherence to the reflex model,which provided the

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28. Note that this paradigm applies to the generation of emotional expressions as well as instinctive impulses and ideo-motor actions. It will also be shown to apply to volition with effort (see Chap. 6).

structural unity for his theory of volition, it is crucial that he ensure that ideas are the real determinants of action.

It is also important to note that James does not make any attempt to explain how the actual machinery of the brain transforms the idea in consciousness into physical movement. James makes it clear that exactly how states of consciousness produce movement is not yet known, although he believes that there may someday be an empirical answer to the question (see James, 1890, 2, p. 495). This makes it clear that James has remained true to the mind-body dualism adopted earlier, and it is his insistence that the mind--or more specifically the existence of an idea in the mind--instigates action, which increases the possibility that consciousness really is efficacious.

The Relationship Between Habit and Ideo-motor Action

Ideo-motor actions have much in common with habits--in fact, many are habits, and all habits follow the ideo-motor rules for enactment just as, Fearing states, "Habit, for James, is 'mechanically nothing but a reflex discharge'" (Fearing, 1930/1964, p. 247; internal quote from James, 1890, 2, pp. 107-108). James, taking his cue from Lotze, shows that ideo-motor and habit patterns are dynamically the same; both are performed in response to the perception of an object. Furthermore, ideo-motor actions do not require an express fiat:

> any more than...all those habitual goings and comings and rearrangements of ourselves which fill every hour of every day, and which incoming sensations instigate so immediately that it is often difficult to decide whether or not to call them reflex rather than voluntary acts. ...the intermediary terms of an habitual series of acts leading to an end are apt to be of this quasi-automatic sort. [29]

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29. James, 1890, 2, p. 523; see also James' reference to Lotze's Medicinische psychologie in James, 1890, 2, p. 523.

Given that ideation, at least at the level of the presence of kinaesthetic ideas is a necessary precursor to action, why does James concentrate on the 'automatic' nature of ideo-motor action? His answer is clear:

> It is a general principle in Psychology that consciousness deserts all processes where it can no longer be of use. The tendency of consciousness to a minimum of complication is in fact a dominating law. ...We grow unconscious of every feeling which is useless as a sign to lead us to our ends, and where one sign will suffice others drop out, and that one remains, to work alone (James, 1890, 2, p. 496).

Our activities gradually fall into a pattern where an original "idea of an end coupled with a series of guiding sensations" (James, 1890, 2, pp. 519-520), is sufficient to generate and maintain a complex train of actions.

And finally, the process having been repeated or practised sufficiently, the idea of the end is sufficient in itself:

> The idea of the end, then tends more and more to make itself all-sufficient. Or, at any rate, if the kinaesthetic ideas are called up at all, they are so swamped in the vivid kinaesthetic feelings by which they are immediately overtaken that we have no time to be aware of their separate existence. ... This comes from the rapidity with which often-repeated movements follow on their mental cue. An end consented to as soon as conceived innervates directly the centre of the first movement of the chain which leads to its accomplishment, and then the whole chain rattles off quasi-reflexively (James, 1890, 2, p. 519).

At this stage: "the determining condition of the unhesitating and resistless sequence of the act seems to be the absence of any conflicting notion in the mind" (James, 1890, 2, p. 523). All that habitual actions require is the notion of the beginning of the act; the action is then carried out in a seemingly automatic fashion (James, 1890, 1, pp. 114-116).

The rules of habit formation account for the differences in the three cases of ideo-motor actions given above. In the second case the skill required to get the ball on target may not have been fully

developed, thus requiring a concentrated attention on kinaesthetic ideas. As skill increases, attention to these ideas--their very presence in consciousness--would diminish if it did not disappear altogether. It may also be the case that kinaesthetic ideas will continue to dominate in consciousness; whether or not the kinaesthetic ideas are ever completely dropped from conscious awareness depends on the nature of the task itself. In the first example, the 'habit patterns' of picking up the pin or bit of dust are so ingrained in the individual that the mere percept is sufficient to prompt the behaviour while the 'greater part of consciousness' attends to the ongoing conversation. The action is 'quasi-automatic'. In the third instance, the habit of getting out of bed on awakening is delayed by conflicting ideas in consciousness; once the idea to get up gains ascendency for an instant, the act is performed so unhestitatingly that the individual is unaware of having gone through the motions at all. The three cases differ, finally, only in regard to the level of quasi-automatic action that has developed in each. The kinaesthetic cues have become 'supernumerary' in cases one and three while they are still 'necessary' in case two. The appearance of automatic or reflexive behaviour simply demonstrates the strength of habit formation. The responses are all voluntary, however automatic they may appear to the observer or feel to the actor, and they can be inhibited as easily as they are released.

Finally the function of ideo-motor action is to facilitate an efficient adjustment to reality:

> The great thing, then, in all education, is to make our nervous system our ally instead of our enemy. It is to fund and capitalize our acquisitions, and live at ease upon the interest of the fund. For this we must make automatic and habitual, as many useful actions as we can, ...The more details of our daily life we can hand over to the effortless custody of automatism, the more our higher powers of mind will be set free for their own proper work (James, 1890, 1, p. 122).

The Problem of Innervation

At this point it appears that James' conception of ideo-motor action is that of a sophisticated reflex process. Volition is required at the onset of the development of an activity both to allow for the selection of the goal and the perseverance necessary to perfect the action. The action can then be performed in a reflex or habitual way, and has a quasi-automatic status in the behavioural repertoire of the individual. James' insistence that kinaesthetic ideas are sufficient to release movements correlates with the quasi-automatic nature of habitual movements for he is stressing the sensational aspects of the ideo-motor paradigm without a corresponding emphasis on the purposive elements of the action.

But it is clear that James did not mean that the original volitional nature of ideo-motor action 'disappeared' once the action was integrated into the behavioural repertoire. He writes:

> The first point to start from in understanding voluntary action, and the possible occurrence of it with no fiat or express resolve, is the fact that consciousness is in its very nature impulsive. We do not have a sensation or a thought and then have to add something dynamic to it to get a movement. Every pulse of feeling which we have is the correlate of some neural activity that is already on its way to instigate a movement. ...The popular notion that mere consciousness as such is not essentially a forerunner of activity, that the latter must result from some superadded 'will-force', is a very natural inference from those special cases in which we think for an indefinite length of time without the action taking place. These cases, however, are not the norm; they are cases of inhibition by antagonistic thoughts. When the blocking is released we feel as if an inward spring was let loose, and this is the additional impulse or fiat upon which the act effectively succeeds (James, 1890, 2, pp. 526-527).

The nature of the idea, and its relation to other ideas present in the stream of consciousness is critical in determining whether or not the act will immediately follow the idea of the act. Whether or not an action immediately follows upon the emergence of the idea in consciousness depends upon whether or not there are any 'inhibiting'

ideas present in consciousness at any given moment. And this is where James' strong opposition to the theory of innervation becomes most meaningful. He is attempting to build a theory of consciousness wherein the contents of consciousness themselves are efficacious in determining whether or not an action is performed. Will, in James' sense is not a super-added structure or function, grafted onto a mechanical conception of mind (see Wild, 1969, p. 254). Instead, will or volition is the impulsive aspect of the idea itself. In some cases, the ordinary impulsive quality of the idea is insufficient to prompt action. This happens when the idea is 'blocked' by another idea, or when the idea consists of an unverifiable belief. Then an extra fiat, or mental effort, is necessary to hold the idea in consciousness so that it can eventually be released into movement. But in cases where the idea is uninhibited, and when the idea itself is of an 'uncomplicated' action, the idea is immediately released as movement. Restraint, or the lack of it, is a result of the given state of consciousness and nothing more is necessary.

In the course of his diatribe against the hypothesis that feelings of innervation are experienced, James writes:

> It is swallowing a camel and straining at a gnat for a man (all of whose muscles will on certain occasions contract at a sudden touch or sound) to suppose that on another occasion the idea of the feelings about to be produced by their contraction is an insufficient mental signal for the latter, and to insist that an additional antecendent is needed in the shape of 'a feeling of the outgoing discharge' (James, 1890, 2, p. 495).

The theory of innervation, were it to be included in James' system, would disrupt the continuity of consciousness. He claims that there is no empirical or introspective evidence to support the existence of a feeling of innervation in the non-volutnary movements we make (see James, 1890, 2, p. 494). Nor can he find any evidence for the

existence of feelings of innervation immediately prior to voluntarily executed actions (see James, 1890, 2, pp. 498-501).

But James' adamant refusal to admit the existence of feelings of innervation is motivated by philosophical rather than empirical considerations. He had to preserve the efficacious nature of consciousness, and this could only be done epistemologically--that is, the 'ideas' which incite actions must be conceived of as intentional or purposive, and cognitive of the conditions of the reality they act upon through the aegis of the body. The body is the means through which the mind knows the world and operates on the world. The afferent connection is a 'direct' connection of incoming sensation to mind--the object in the world is 'known' by the mind through the feelings of afferent sensations as they enter the body.[30] James' intention, therefore, is to create a conception of ideo-motor action, wherein the thoughts which incite activity are generically identical to the thoughts which 'know' the external world. The mind thinks, not in terms of activating the neural machinery as the theory of innervation supposes (see James, 1890, 2, p. 493), but in terms of goals and objects: that is, it thinks in terms of the world as it 'knows' it. Efferent feelings of innervation could add nothing to this knowledge; afferent feelings can; for afferent feelings provide information on the success or failure of the undertaking, and it is through the afferent feelings that the individual knows whether or not he has attained his goal (see James, 1890, 2, pp. 493-494).

We can conclude that the same genera of feelings which are involved in the cognition of an object are involved in our active dealings

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30. This is the rationale for the theory of emotion. What James fails to do is to show how these afferent feelings are transformed into emotional ideas.

with the object. While James stated that thoughts are cognitive (see James, 1890, 1, pp. 271-283), he also claimed according to Wiener, "That all thinking was ideo-motor in character" (Wiener, 1965, p. 109). Wild concurs with Wiener's statement, writing that:

> Underlying his whole conception of the will is his conception of the reflex arc, and the principles of ideo-motor action. Every incoming current must eventually find a release in bodily movement of some kind. Hence every sensation, perception, or idea in the brain, must have a tendency to produce such action (Wild, 1969, p. 255; see also Wilshire, 1968, p. 178).

Thoughts about the world can be directly productive of action in the world, as case one demonstrates. The perception of the offending pin or bit of dust is enough to prompt the action of removing the object. Thoughts are not merely cognitive--that is, the perceiver notes the existence of an object--but are active in the sense that the thought itself instigates a physically meaningful interaction with the object. Thoughts about the world and thoughts acting upon the world are equivalent, or to put it another way, cognition and action are two aspects of one idea in the mind.

All ideas are not immediately productive of action. There are many thoughts which are cognitive and have no particular action potential, as James points out (see James, 1890, 2, p. 525). There are also cases wherein the thought has action potential but the action is not an obvious component of the thought itself. In these cases, the difficulty is to find the 'correct' conception of the situation so that appropriate action will result. These cases will be discussed in the two chapters which immediately follow. For now, it is sufficient to point out that James' pragmatic methodology largely deals with the means of turning supposedly unverifiable, and therefore 'inactive' ideas into postulates that can be tested in the sensible world. The ideo-motor paradigm therefore provides the psychological

foundations for the pragmatic method of truth. Broadly speaking, cognition and action are the two 'ends' of the same psychological process: they merge in the particular idea in consciousness. But this subjective merging is only possible if cognitions and goals are conceived in a unified fashion--that is, through the afferent feelings. To put it still another way, the relationship between the cognitive and active aspects of the thought can be described phenomenologically as the 'intentionality' of the thought.

The next level of the structural hierarchy of action is composed of those volitional acts where effort or 'will' is needed before the idea is released into action according to the rules of the ideo-motor paradigm. Volition with effort, as James termed it, is necessary when the individual finds himself in a situation which does not suggest an 'automatic' or habitual response, or when he is faced with a dilemma which can only be resolved by a commitment to one unverifiable postulate or another. Volition with effort may thus be taken as the 'highest' level in a hierarchical theory of action. There are also reasons to suspect that the will in fact has two functions and the introduction of effort indicates a 'break' between the adaptive and 'moral' functions. The topic is a large one and deserves a chapter of its own.

CHAPTER 6

VOLITION WITH EFFORT:

DOES THE WILL HAVE TWO FUNCTIONS?

> Nor are the moral judgments those most invariably and emphatically impressed on us by public opinion. The most characteristic and peculiarly moral judgments that a man is ever called on to make are in unprecedented cases and lonely emergencies, where no popular rhetorical maxims can avail, and the hidden oracle alone can speak, and it speaks often in favor of conduct quite unusual, and suicidal as far as gaining popular approbation goes (James, 1890, 2, p. 672).

The Five Types of Decision

Ideo-motor actions are the first real voluntary acts to appear in the action hierarchy. They are voluntary because they have their genesis in the plastic pool of instinctive tendencies, because they are the products of selective interaction with the sensible world, and because they can be inhibited by (or inhibit) competing ideas in the stream of consciousness. But if ideo-motor actions are voluntary actions (as opposed to reflex movements, emotional expressions, and instinctive reactions), they still do not require any special fiat of the will to discharge into movement. The mere presence of the uninhibited idea in consciousness is sufficient to ensure its discharge, according to the rules of the reflex paradigm. Ideo-motor actions must therefore be contrasted with actions which require an extra fiat or burst of mental effort before they can discharge into muscular movements. Actions which are preceded by mental effort do not, however, form the next level of the action hierarchy after ideo-motor action; instead, James constructs several intermediate levels which are described as the four types of decision. The top level of the hierarchy is occupied by the fifth category of decision-making, where mental effort is required before the idea can be discharged.

According to James, decisions are called for when deliberate action is required and when the mind contains ideas that are antagonistic to one another. The idea that urges a specific action cannot discharge itself because it is blocked by contrary impulses, so that experientially the individual is in a state of indecision (see James, 1890, 2, p. 528). Finally, when one idea prevails and movement ensues, or, on the contrary, one idea is firmly squelched by the opposing idea, we are said to have 'decided' or to have uttered "our voluntary fiat

in favour of one or the other course" (James, 1890, 2, p. 528). Decisions are divided into five categories by James[1] but he does not describe the decision processes in a hierarchical order (that is, according to their relationships with ideo-motor actions and the other structures of action). Therefore, to facilitate the analysis of the relationships between all of the structures of action, a hierarchical order has been imposed on the five decision processes. This hypothetical ranking has been carried out by considering the range of possibilities for mental selection that pertains to each of the five types, whether or not the full range of possibilities is utilized by the individual in making the decision, and the 'strength' or character of the mental fiat that is connected with each of the five types. The revised order should therefore be consistent with James' broad theories of consciousness and volition.[2]

In the first type of decision, the voluntary nature of the action is questionable for we find ourselves acting automatically "as if by a spontaneous discharge of our nerves, in the direction of one of the horns of the dilemma" (James, 1890, 2, p. 532). The outbreak of energy is unpremeditated so that we are less like voluntary agents than "like passive spectators cheering on the display of some extraneous force" (James, 1890, 2, p. 533). This type of decision follows a period of

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1. See James, 1890, 2, pp. 531-535; see also Wild, 1969, pp. 256-258 for a good description of the five types of decision.

2. The changes made in James' order are not drastic: decisions of the second, fourth, and fifth types retain James' order in the revised schema. Decisions of the first and third types are reversed so that James' third type of decision is first in the new system, while his third type is given first place. The reasons for this reordering are implicit in the discussions of each category. It is relevant in terms of accepting or rejecting the new order that James does not indicate that he is ranking the categories--with the exception of category five which is distinguished from the other four because it requires mental effort.

inability to resolve the dilemma by discovering the 'right' conception[3] of the situation, so that after a period of psychic stress the individual suddenly finds himself swept away in an exciting act which releases the tension.

The action is voluntary because: "so exciting is this sense of motion after our intolerable pent-up state, that we eagerly throw ourselves into it" (James, 1890, 2, p. 532). But the fiat is given after movement begins so that this type of 'decision' is very close to reflex action, and James says that those who most often react in this fashion usually have a fatalistic mood of mind (see James, 1890, 2, p. 533). Decisions of the first type would seem to involve a more 'primitive' type of process than ordinary ideo-motor actions, for James writes that the outcome is usually catastrophic (see James, 1890, 2, p. 533). Dilemmas which are resolved this way could have two possible origins: they may be resolvable through a search for a 'correct' solution, or they might fall outside the norm of human experience so that they do not lend themselves to 'conceptual' solutions. James does not elaborate on this point. Whatever the origin of the dilemma however, the individual has two possible modes of reaction; he can allow himself to be swept away by the reflex discharge or he can exert an extra fiat of the will to overcome the tendency to act and perhaps solve the problem more 'rationally'. In Jamesian terms, the individual who gives his fiat to the reflex discharge is acting fatalistically because he fails to use his will and his intellect to come up with a new solution to the problem (if the dilemma concerns issues outside the norm of experience), or because he fails to endure the situation

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3. See the discussion of the third type of decision for James' definition of how the 'right' or 'correct' conception of a situation is discovered.

until a conceptual solution presents itself. In our hypothetical re-ordering of the categories, decisions of the first type come directly after ideo-motor actions. These 'decisions' are actually somewhat more primitive than ordinary ideo-motor actions because the fiat is only given after the action has begun while in ideo-motor action, the fiat comes with the idea which instigates the act. But category one decisions are ranked above ideo-motor actions in the hierarchy because they only arise when the range of selectable options extends beyond the boundaries of the ideo-motor set of options, and when the outcome is important to the individual.

Next, come decisions which are made passively--the individual feels no real commitment to the solution of the dilemma, and decides that he may as well follow this alternative instead of the other. He makes a selection, often on the basis of external pressures, and acts. In this second type of decision, the search for conception is minimal. This means that the situation is most likely conducive to a reasoned search for the correct 'answer', but the individual is unconcerned with discovering it. We drift into action determined from without "with the conviction that, after all, we might as well stand by this course of action as by the other" (James, 1890, 2, p. 532). Again, there is no real effort of the will, but this time the fiat is rationally given in response to external pressures and not to a reflex discharge (see James, 1890, 2, p. 532).

Decisions which involve a search for the correct conception of the situation make up the third category. These are reasonable decisions and represent the thinker using his rational powers in harmony with his empirical knowledge. The decision is important to the individual and he brings his full powers of reason to bear on the problem. However, these decisions do not require mental effort and thus do not

rank as high as category five decisions because the individual acts on the basis of his previously acquired knowledge of the world. His range of selectable options is not increased.

The feeling of mental effort is minimal and the dynamics of the decision process correspond to certain characteristics of ideo-motor action. When the correct conception is discovered, the decision is made, and the thinker immediately acts out his decision in muscular terms. The period of indecision which precedes action distinguishes category three decisions from ordinary ideo-motor acts and this period is spent in "conceiving the doing or not doing of the act in point. The moment we hit upon a conception which lets us apply some stable part of our Ego, our state of doubt is at an end" (James, 1890, 2, p. 531).

James maintains that in category three decisions, reasoning and willing are parallel phenomena: both consist of a search for the right conception of the problem: "A 'reasonable' character is one who has a store of stable and worthy ends, and who does not decide about an action till he has calmly ascertained whether it be ministerial or detrimental to any one of these" (James, 1890, 2, p. 532). The quest revolves around ends and conceptions previously determined and the relation to habit is obvious: "The conclusive reason for the decision in these cases usually is the discovery that we can refer the case to a class upon which we are accustomed to act unhesitatingly in a certain stereotyped way" (James, 1890, 2, p. 531). The fiat for action occurs in the recognition of a conception of action appropriate to the situation, so that the individual seems almost passive: the reasons for the decision appear "to flow in from the nature of things and owe nothing to our will" (James, 1890, 2, p. 531). The act is voluntary because the individual must choose between alternatives,

but real mental effort and striving to maintain a conception are not included in the process. This type of decision is a 'step up' from the type two decision because the resolution of the dilemma is not determined by outside agents; active, rather than passive assent is involved.

Decisions which come about as a result of cataclysmic events make up the fourth level of the hierarchy. The individual is 'passive' in the sense that his flow of thought is interrupted by outside events which cannot be ignored but the decisions that result from these interruptions of the flow of thought often have momentous effects on his life-style. Psychologically, the 'consequences' of the crisis are often an increase in the 'selectable' alternatives that the individual has. Options which were formerly lifeless or unimportant may now be seen as live and momentous. In decisions of the fourth type, deliberation ends as a result of changes in external circumstances, and we pass instantly from the "easy and careless to the sober and strenuous mood, or possibly the other way" (James, 1890, 2, p. 533). Grief and fear are the most common instigators of this change of mood; the "consequence is an instant abandonment of the more trivial projects with which he had been dallying, and an instant practical acceptance of the more grim and earnest alternative which till then could not exhort out mind's consent" (James, 1890, 2, p. 533). The first part of the process does not allow true decision making; the change in deliberative mood gets no express fiat from consciousness; the change is imposed from without. But the results can be profound; once the mind is forced to grant the reality of the unpleasant and hitherto rejected idea, there is the potential for "All those 'changes of heart', 'awakenings of conscience', etc., which make new men of so many of us" (James, 1890, 2, p. 533). Determining the new course

of action may then require a decision of the fifth type.

At the top of the decision hierarchy, and therefore at the top of the whole hierarchy of action, are those decisions which require mental effort. Decisions of this type cannot be made by simply bringing the full power of the intellect to bear on the dilemma. They require an extra effort of the will to hold attention on the idea which is finally selected out of two or more competing alternatives. James made it clear that there is a certain category of dilemma which cannot be resolved through appeal to the instinctive impulses, habit structures, or the accumulated empirical beliefs and conceptions about the nature of the sensible world. These are the dilemmas which require mental effort for no single ideal seems to make an unambiguous 'fit' with the problem.

It is only in decisions of the fifth type that real mental effort is exerted. Mental effort is to be utilized when we are not caught up in a sheer release of energy (or can resist it), when we are not indifferent to the outcome, when a calm search for the correct conception is insufficient, and when nothing 'cataclysmic' intervenes to halt the ongoing deliberation. The fifth type of decision is made when non-instinctive motives are made to prevail, and they "prevail when they ever do prevail, with effort; and the normal...sphere of effort is thus to be found wherever non-instinctive motives to behavior are to rule the day" (James, 1890, 2, p. 536). When there is no pre-determined means of discovering a course of action which is in fact implicit in the situation, we feel that our choices, our efforts, do matter:

> In the fifth and final type of decision, the feeling that the evidence is all in, and that reason has balanced the books, may be either present or absent. But in either case we feel, in deciding, as if we ourselves by our own wilful act inclined the beam; in the former case by adding our

> living effort to the weight of the logical reason which taken alone, seems powerless to make the act discharge; in the latter by a kind of creative contribution of something instead of a reason which does a reason's work. The slow dead heave of the will that is felt in these instances makes all of them a class altogether different subjectively from all the three preceding classes (James, 1890, 2, p. 534).

Psychologically, it is the feeling of effort, the feeling of the 'slow dead heave of the will' that isolates this type of decision. Epistemologically, decisions of the fifth type involve ideas from the sub-world of morals, metaphysics, and aesthetics and are therefore distinguished from all of the other action structures. Category five decisions are therefore distinguishable from the other four categories because they do not ordinarily pertain to the common world of experience; instead they pertain to the realm in which only metaphysical and moral postulates can decide the issue.[4] Any discussion of decisions involving mental effort is necessarily epistemological because whether effort is required depends upon what is known, verifiable, and available to percept, and what must be 'realized' within the context of man's unique moral possibilities.

Effort is necessary in those cases where the decision is momentous and at the same time involves 'unverifiable' ideas (see James, 1890, 2, p. 535), or when it is momentous and involves a choice between two alternatives "with no strictly objective or imperative choice between them" (James, 1890, 2, p. 534). James emphasizes the

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4. Note that it was stated in regard to category one decisions that these decisions might best be made with the application of mental effort to the problem. James does not make it clear as to whether or not decisions of the first type can pertain to ethical issues or whether a search for the correct conception would suffice. Decisions in category one were therefore placed at the lowest level of the decision-hierarchy because actions were generated on a reflex basis, rather than through a mental fiat. Individuals whose decision-making falls into category one may also be suffering from some pathological condition of the will. Pathological (as opposed to normal) modes of decision-making are discussed below.

heavy agonizing nature of making such decisions: he speaks of "murdering the vanquished possibility" (James, 1890, 2, p. 534), and this not only describes the experience of decision-making, but has implications for understanding the selection processes of consciousness in relation to the world. In situations which demand the 'right conception' there need be no sense of murdering alternatives--other alternatives are simply less 'right' or 'efficient'. By contrast, the questions resolved by volition with effort are "Questions as momentous as that of the very existence of spiritual causality, as vast as that of the very existence of universal predestination or free-will" (James, 1890, 2, p. 535).

James places stringent restrictions on the legitimate scope of mental effort in the decision processes:

> The immense majority of human decisions are decisions without effort. In comparatively few of them, in most people, does effort accompany the final act. We are, I think, misled into supposing that effort is more frequent than it is, by the fact that during deliberation we so often have a feeling of how great an effort it would take to make a decision now. Later, after the decision has made itself with ease, we recollect this and erroneously suppose the effort also to have been made then (James, 1890, 2, pp. 534-535).

It would seem to follow from this that if a decision can be made in the context of one of the other four forms, such will be the case, and the 'remembered' feeling of effort will be an illusion. Whether or not James' theory of volition with effort is consistent in regard to these restrictions on the legitimate scope for the use of mental effort will be discussed below.[5]

The top level of the action hierarchy is not restricted to that

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5. Note that decisions which require mental effort appear to correspond to options which require the will to believe (see James, 1896/1911, pp. 2-4).

category of decisions which require effort; it also includes all of the unverifiable beliefs which require effort if they are eventually to be discharged in action. Metaphysical and ethical options may thus make up the two poles of a dilemma which requires effort for its resolution or they may be opposed to instinctive or ideo-motor ideas, or to empirical conceptions about the world, and thus require effort to prevent their inhibition in consciousness. The top level of the hierarchy includes the whole range of metaphysical, aesthetic, and ethical axioms, which make up the pool of non-instinctive ideas, or ideas which are 'foreign to the instinctive history of the race', and therefore require mental effort to sustain themselves in consciousness. The genesis of these ideas is discussed below.

This completes the description of the action hierarchy. The base of the hierarchy is composed of reflex actions. Next, come the instinctive reactions and emotional expressions. Ideo-motor actions occupy the next level. The first four types of decisions appear next, arranged in hierarchical order. Finally, the top level of the hierarchy is composed of those actions which require mental effort before the idea can stabilize in consciousness and thus be discharged according to the 'rules' of the reflex paradigm.

Problems and Hypotheses

James made a categorical distinction between those decisions which require effort for their resolution and those which 'logically' follow from the conceptual relationship of the mind to the world. In the discussion of the sub-worlds of reality, we showed that James constructed his epistemology so that belief has two functions: it is the mental faculty of granting assent to those events which coerce consciousness with their reality or 'truth', so that it describes the

'intentionality' of the thought in consciousness. It is also the faculty which enables us to 'believe' in postulates which are presently unverifiable, in the hope that our actions may help them to 'become' true. James makes it clear that belief and volion are "one and the same PSYCHOLOGICAL phenomenon" (James, 1890, 2, p. 321), in that they mean "a certain relation between objects and the Self" (James, 1890, 2, p. 321). It is therefore reasonable to predict that James' theory of volition will exhibit the same basic dualism of function that characterizes the theory of reality.

'Voluntary', in the sense of ideo-motor action, simply means that the idea is uncontradicted in consciousness; it is synonomous with 'passive' belief, or intentionality because the fiat for action is contained in the idea itself. 'Voluntary', in the sense of volition with effort, means that the idea can only stabilize in the stream of thought when it is accompanied by mental effort. The following discussion will show that mental effort is not correlated with the intentionality of any given idea; each idea has a certain impulsive power of its own, and whether or not it is accompanied by effort depends on several factors. One of the major problems in the analysis of James' theory of volition is to determine whether mental effort can potentially arise in conjunction with any idea in consciousness, or whether its appearance is limited to a restricted set of ideas. If effort can be aroused indifferently, then it would follow that the adventitious appearance of effort could be used to provide a functional unity for the theory. The fortuitous appearance of effort would be related to the interaction between the mind and the sensible world and the foundations for James' theory of ethics would be contained within this interaction and the fortuitous arousal of effort. It will be shown, however, that James did not use effort to link impulsive

and nonimpulsive ideas, but made an a priori separation between those ideas which required effort and those ideas which did not.

This leads into the major problem in James' theory of volition; that problem concerns the status of the ideas which make up the stream of consciousness. At times James intimates that there are two distinguishable categories of ideas so that the mass of ideas in consciousness can be divided into those which are instinctive and those which are 'foreign to the instinctive history of the race'. By definition, instinctive ideas do not require mental effort to be discharged into movements, while non-instinctive ideas do. Instinctive ideas are therefore impulsive; non-instinctive ideas are non-impulsive (see James, 1890, 2, p. 536). This implies that there is an a priori tension in consciousness between the instinctive and non-instinctive ideas. But James also implies at other times that a non-impulsive idea is any idea which the person is reluctant to attend to, and if this is the case, the distinction between impulsive and non-impulsive ideas would have to be made on empirical grounds. Both of these conceptions will be evaluated in some detail below, and a resolution of the disparity between them will be attempted.

When the question is posed as to whether or not the will has two functions, the immediate conclusion is that it obviously has: 'voluntary' in the ideo-motor sense means that the idea comes with a sufficient fiat for immediate discharge into physical movement. This fiat has been described as the intentionality of the thought. Furthermore, the impulsive or intentional character of ideo-motor ideas allows them to inhibit other ideas in consciousness; it also means that they can be inhibited by 'stronger' ideo-motor ideas. They have their origins in the plastic pool of instincts and result from the selective interaction between consciousness and the sensible

world. 'Voluntary' in the case of ideas which require effort, has another meaning: in this case the intentionality of the idea is insufficent to lead to its immediate discharge. The reasons for this insufficiency are discussed in detail below, but briefly, 'non-impulsive' means that the impulsive or intentional force of the idea is not strong enough to inhibit the quasi-automatic ideo-motor ideas which are competing with it. The idea might not have any immediate implications for action, while the competing ideo-motor ideas do, or it might have consequences which are unpredictable (in terms of the afferent sensations that would result from its being acted upon), or it might have consequences that are dangerous or uncomfortable for the individual. Mental effort is therefore necessary to hold the idea in consciousness so that it can be transformed (if necessary) into an idea which has explicit directions for movement. Effort may then be necessary to maintain the transformed idea in consciousness so that it can be discharged against competing ideo-motor ideas which have predictable afferent effects. Effort may also be necessary when two unverifiable beliefs compete for ratification in consciousness. The decision cannot be made in terms of empirical conceptions about the nature of reality; it can only be made when mental effort is used to affirm the validity of one idea over the other. Once the decision is made, the selected idea may require further translation before it can be acted out; furthermore, it might again be impossible to predict the afferent sensations which would result from acting out the idea. Or, once again, the predictable consequences (given in afferent terms) might be dangerous or uncomfortable, so that the idea is in danger of being inhibited by competing ideo-motor responses. The will thus has two explicit functions because it acts to ensure the smooth enactment of ideo-motor ideas, and it functions to give non-impulsive

ideas a hearing in consciousness.

The problem is to determine whether or not these functions are dualistically opposed to each other or whether the two functions work in conjunction to promote the adjustment and development of the individual in relation to the several worlds of reality. So far, the definition of decisions which require effort points to the existence of a distinguishable category of ideas which cannot be acted out according to the ideo-motor paradigm. This indicates that there are two a priori classes of ideas which are opposed to each other in the demands they make upon the individual, and in their 'readiness' to discharge into movements. If it can be shown that there are two conflicting sets of ideas in consciousness, and that these are distinguishable on an a priori, and not on an a posteriori basis, then we will be able to show that the two functions of volition are dualistically opposed to one another, and that James has constructed a 'two-man' theory of consciousness. If, on the other hand, it can be shown that the impulsive/non-impulsive distinction is made on a situational or empirical basis, so that any idea in consciousness (independent of its psychogenetic origins), can take on a non-impulsive status and thus require effort to hold it in consciousness, then we will have shown that the will has two functions in the 'explicit' or 'obvious' sense, but that the functions of volition do not contradict one another and that consciousness exhibits a functional, as well as a structural unity. We will demonstrate that the dualistic interpretation of the statement that the will has two functions, is the correct one, and that James has built a functional dualism into his theory of volition.

So far, we have been restricting our attention to James' psychological model of volition. But James' theory of volition, more than

any other of his psychological theories, was influenced by his philosophical position. We have already seen that the will to believe is to be utilized in those crisis situations where the decision is momentous and forced, and the option is live (see Chap. 4, pp. 287-290). In his writings on moral philosophy, moreover, James often made personal value judgements regarding the 'correct' choices between options--he argued, for example, that it was better to believe in free will than in determinism and better to accept theism over atheism.[6] It will be shown therefore, that while the will to believe is not synonomous with volition with effort, James' psychological conclusions regarding the appropriate or inappropriate use of effort are at times heavily confounded with the logical and personal conclusions he reached in his moral philosophy. It will also be demonstrated that James' concept of mental effort was generated to conform with his philosophical principles and his own ethical decisions.

James' philosophical commitments led him to correlate the sub-worlds of reality with two distinguishable modes of action. On the one hand, man is constituted so that he struggles to achieve comfortable adjustment in the mundane world of sensible reality; on the other, he strives to make his unverifiable beliefs 'true' so that in time, the sensible world will take on a new (and more ethical) character. The demands that the 'worlds of freedom' and the 'worlds of mundane reality' exert on the individual are discussed below, as is James' romantic notion that the real significance of life lies in the struggle to make unverifiable beliefs into empirical beliefs. His emphasis on the worth of the struggle is discussed as support

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6. The relationship between James' personal conclusions and his philosophical constructions is also discussed in chap. 7.

for the hypothesis that James essentially equipped man with a functionally divided consciousness.

The problem of determining whether or not the will actually has two distinguishable and opposing functions cannot be resolved by an analysis of James' psychological writings alone for James attempted (perhaps unsuccessfully) to stay within the limits of a scientific account when discussing volition with effort. James was reluctant to adopt Spencer's and Darwin's conclusion that morality has an instinctive or naturalistic basis. Had he done so, moral issues would have found a natural place in his psychology; moral actions would have had their genesis in instinctive impulses, and would therefore constitute special patterns of interaction between the individual and the sensible world. But James made a sharp separation between science and morals largely because he believed that science was deterministic and that its objects coerced the mind's assent to their reality. He therefore argued that scientific materialism and its implications for an Absolute conception of the universe could only be opposed by believing that the universe was truly indeterminate and that opportunities for the exertion of free will could legitimately arise (see James, 1884/1911; see also James, 1896/1911). This separation between science and ethics makes it imperative to go to James' moral philosophy to determine when he considered the application of mental effort to be legitimate, and when he did not.

The psychological and philosophical theories of volition therefore interact, and reinforce one another. If James' philosophical commitments determined the construction of the psychological model, the psychological postulates in turn form the empirical support system for James' later philosophical theories. The following analysis therefore has a four-fold purpose: first, it will give a clearer

picture of the psychological functions of volition, and second, it will also determine whether or not volition has two dualistically opposed functions. Third, the analysis will provide a rationale for the development of the psychological theory itself, explaining James' desire to refute the theory of innervation, and his insistence that volitional effort is purely a mental phenomenon--that it is radically distinguishable from the feelings of muscular effort which accompany any action, and that 'feedback' from any type of action is given in the afferent sensations which follow the release of the idea into muscular movements. Finally, the analysis will serve as an introduction to the foundations of the pragmatic method and to the problems that occupied James when he left psychology for philosophy.

The Psychological Model of Volition with Effort

James' psychological model of volition with effort is based on the distinction he made between mental and muscular effort, his definition of mental effort in relation to attention, and the reflex action paradigm. In refuting the theory of innervation, James proposed that two categories of effort could be distinguished. Muscular feelings were substituted for feelings of innervation; the function of these afferent muscular feelings was to convey feedback concerning the physical results of discharging the idea back to the mind. By way of contrast, the feeling of effort that is aroused in decisions of the fifth type or in options requiring the will to believe, is a feeling of mental effort, sharply distinguishable from any feelings of muscular effort which are produced when an action is performed. Mental effort therefore precedes muscular effort, which then follows automatically once the idea is stabilized (through mental effort), in consciousness: "If on this purely mental plane his

effort succeeds, the outward consequences will take care of themselves, for the representation will work unaided its motor effects" (James, 1880/1920, p. 199; see also James, 1880/1920, pp. 194-198).

Mental effort is defined by James as the effort of attention that is required to hold an idea in consciousness:

> attention with effort is all that any case of volition implies. The essential achievement of the will, in short, when it is most 'voluntary', is to ATTEND to a difficult object and hold it fast before the mind. The so-doing is the fiat; and it is a mere physiological incident that when the object is thus attended to, immediate motor consequences should ensue (James, 1890, 2, p. 561).

The will, at its most voluntary, is thus reduced, psychologically, to the mental effort of attention.

Ideo-motor action and volition with effort are distinguished by the feeling of mental effort experienced in the latter category and completely absent in the first. 'Difficult' ideas or ideas with strong co-existing competition in the stream of consciousness must be maintained through effort so that they can be automatically released into the desired behaviour. This is volition with effort. "To sustain a representation, to think, is in short, the only moral act" (James, 1890, 2, p. 566), for it is the idea held foremost in consciousness that will find its release in action. Its release into action is "a mere physiological accident" (James, 1890, 2, p. 561); thus, the reflex model is used to unite ideo-motor action and volition with effort in terms of their muscular effects. The

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7. In defining will as an effort of attention or the sustaining of an idea in consciousness, James had historical precedents in the works of Carpenter (see Carpenter, 1855, pp. 621-629), and more unambiguously, in Renouvier's writings (see Perry, 1935/1974, 1, p. 323). Although he makes no citations in the Principles, James refers to Renouvier's theory of volition in his earlier paper, "The feeling of effort" as "the firmest, and in my opinion, the truest connected treatment yet given to the subject by any author with whom I am acquainted" (James, 1880/1920, p.194). Renouvier therefore provided James with what he believed to be an acceptable account of volition.

distinction is made in terms of whether or not mental effort is necessary for the idea's eventual release so that moral action (or any other type of action) is defined by the nature of the idea in consciousness, and not in the muscular completion of the action:

> To sum it all up in a word, the terminus of the psychological process in volition, the point to which the will is directly applied, is always an idea. There are at all times some ideas from which we shy away like frightened horses the moment we get a glimpse of their forbidding profile upon the threshold of our thought. The only resistance which our will can possibly experience is the resistance which such an idea offers to being attended to at all. To attend to it is the volitional act, and the only inward volitional act which we ever perform (James, 1890, 2, p. 567; see also James, 1890, 2, p. 560).

Gilbert's description of James' theory of volition is a propos here: "willing" he says, "is reduced to other elementary psychological processes. ...willing was reduced to ideas of movements which one wishes to perform, followed by the movement" (Gilbert, 1970, p. 791). Volition with effort is therefore describable psychologically as the effort of attention that holds the idea in consciousness until it can be released into movement. This paradigm provides the dynamic foundation for James' moral philosophy--we determined earlier that James was not a voluntarist in the traditional sense, because he concentrated on the ideational or cognitive aspects of volition. Nevertheless, as Stroh points out, the volitional element--the expending of mental effort--is in fact the deciding factor in whether or not ethical ideas will be realized in the sensible world:

> The first thing to grasp in moral philosophy is the volitional rather than the purely intellectual character of the whole enterprise. Whether we can and ought to have a moral outlook at all cannot be decided by pure reason or any mere disinterested analysis of the facts. No moral skeptic can be refuted by logic or by appeal to the facts if he has already decided against any moral viewpoint. A moral outlook can only exist if it is desired by someone. Morality stands on an initial faith in its possibility, and has pragmatic meaning only if this faith is made concrete and actively related to future, practical consequences. An abstract possibility

> is not enough for James, since this would be merely static and verbal, whereas morality, if it is demanded at all, must be related to action (Stroh, 1968, p. 136).

Psychologically, what stands behind the 'desire' for, or 'faith' in, moral possibilities, is the mental effort which is expended on ideas. And Stroh emphasizes the critical concept in James' psychological theory of volition, his moral philosophy and his pragmatism: that concept is that ideas must eventually be released into muscular movements. To believe in an idea or postulate means that the individual must act to concretize the meaning of the idea or postulate in the sensible world. Corresponding sensible objects must be discovered which verify the 'truth' of theoretical postulates so that the rationalization of the metaphysical and ethical worlds can proceed. Similarly, ethical ideas often have action consequences in the sensible world so that the nature of the sensible world is radically changed. The effort of attention expended on any idea, and the reflex consequences of holding any idea in consciousness describe the psychological dynamics of how metaphysical and ethical ideas are 'made' true in the sensible world. The theory of volition therefore has important implications for the understanding of James' broad philosophical position. Ideas have real consequences.

And this brings us to the nature of the ideas which require effort before they can be released into action. While the psychological dynamics of how an idea eventually results in muscular movement seem fairly straightforward at this point, the problem of why some ideas require effort before they can be released is more complicated. It is therefore necessary to examine the distinction between instinctive and non-instinctive motives and the respective strengths of their impulsive powers in the stream of consciousness so that the relationship between ideation and effort can then be analysed

in more detail.

Impulsive versus Non-impulsive Ideas

James divides the reservoir of ideas in consciousness into impulsive and non-impulsive categories as follows:

> There is a certain normal ratio in the impulsive power of different sorts of motive, which characterizes what may be called ordinary healthiness of will, and which is is departed from only at exceptional times or by exceptional individuals. The states of mind which normally possess the most impulsive quality are either those which represent objects of passion, appetite, or emotion--objects of instinctive reaction, in short; or they are feelings or ideas of pleasure or of pain; or ideas which for any reason we have grown accustomed to obey so that the habit of reacting on them is ingrained; or finally, in comparison with ideas of remoter objects, they are ideas of objects present or near in space and time. Compared with these various objects, all far-off considerations, all highly abstract conceptions, unaccustomed reasons, and motives foreign to the instinctive history of the race, have little or not impulsive power. They prevail, when they ever do prevail, with effort; and the normal, as distinguished from the pathological, sphere of effort is thus found whever non-instinctive motives to behavior are to rule the day (James, 1890, 2, p. 536).

James is following the pre-evolutionary precedent of the Mills and Bain who argued that moral ideas were 'acquired' during the course of life,[8] and thereby rejecting Darwin's and Spencer's argument for an instinctive foundation for moral ideas. The influence of Darwin's evolutionary thesis on James' theory of morals is complex and will be discussed in more detail below but it is relevant in the present context that Darwin contended that habit and will were often opposed (see Darwin, 1859/1977, p. 235). Darwin goes no further than this, and did not intend to provide a rationale for

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8. (See Young, 1970, p. 177; Young refers to Darwin's Descent of man, 1874, p. 98). This does not mean that James rejected a 'naturalistic' genesis for moral impulses, but that he did not link them with the instincts, and the psychogenetic basis of moral impulses as discussed below. It does mean, though, that James considered morals or ethics to be the 'highest' form of human development. The mind that grapples with the problem of free will is the sophisticated mind.

rejecting an instinctive foundation for moral development. James, however, makes the distinction between the instinctive impulses and "motives foreign to the instinctive history of the race" (James, 1890, 2. p. 536), into the foundation for his psychological theory of volition with effort. The major distinction between the two categories of ideas consists in their ability (or lack thereof) to maintain themselves in consciousness without effort. The distinction is an important one for it supposes that there are two qualitatively distinct categories of ideas. This means that James' theory of volition is not consistently based on evolutionary premises as Spencer, and later Darwin, outlined them (see Young, 1970, p. 177). Instead, the theory of volition relies on James' selection and translation of biological evolutionary concepts into Renouvian terms. It may be relevant, in this context, that Renouvier did not support evolutionary theory, and James' theory of volition owes more to Renouvier's "Psychologie rationelle", in the Essais de critique generale (1875), than to any other source (see James, 1880/1920, p. 194). The tension (and possible functional dualism) that is exhibited in the broad theory of volition can therefore be related to James' commitment to the conflicting theories of Darwin and Renouvier and his efforts to reconcile the two positions.

That some impulses are 'instinctive' while others are not is not problematic; James' extensive catalogue of instincts and his categorization of conceptions belonging to the various sub-worlds of reality have already been discussed. What is problematic is his notion that abstract ideas and motives foreign to the instinctive history of the race have little or no impulsive power, so that they prevail only with effort. The division of ideas into non-impulsive and impulsive categories appears to contradict his earlier statement

that "the first point to start from in understanding voluntary action...is the fact that consciousness is in its very nature impulsive"(James, 1890, 2, p. 526). The existence of a definable category of ideas with little or no impulsive power of their own would appear to endanger the structural unity of consciousness so that exactly what James means by a non-impulsive idea is important.

James did not mean that non-impulsive ideas were not 'intentional' in the sense defined in Chap. 3. All ideas are intentional in expressing their objects, and the non-impulsive ideas are no exception. But not all ideas have specific implications for muscular-movement--a large number of perceptions and conceptions are non-impulsive in this sense; many of them are not even potentially impulsive (see Chap. 4, regarding the necessary truths for example. Impulsive ideas, as the term is used in James' theory of volition, include that class of ideas which have immediate implications for action; these ideas are then opposed to a particular set of non-impulsive ideas which do not have immediate implications for action. Non-impulsive (again, in the context of James' theory of volition) also refers to a particular set of ideas which are easily inhibited by impulsive or ideo-motor ideas even when they do have immediate discharge potential. Within the theory of volition, the impulsive or non-impulsive status of any idea is determined by its psychogenetic origins and its relationship to other ideas in consciousness.

If the feeling of mental effort is attached to a certain definable class of ideas, rather than arising in any random, difficult, and fortuitous situation, then effort could not retain its status as an independent force. Instead, mental effort would simply appear as the means of describing the impulsive force of a non-impulsive

idea, when such an idea did result in movement.[9] Effort would be equated with James' proviso that consciousness is impulsive, and this was not his intention. It is therefore necessary to re-examine James' definition of mental effort and its relation to ideation.

So far, mental effort has been defined as the 'mental energy' which the individual exerts to hold an 'anti-impulsive, idea in the forefront of consciousness so that it can be discharged into muscular movement. James states that it is necessary to exert such effort when the idea carries little or no impulsive power itself so that effort is added to the idea but it is not part of the idea itself (see James, 1890, 2, p. 536, quoted above, p. 405). Brett reveals the problems with this conception when he writes:

> From here in the Psychology, in spite of the genesis of the will from reflex action, we find registered a type of decision which is characterised by that mysterious process described as "adding our living effort to the weight of the logical reason", "a creative contribution of something instead of a reason which does a reason's work". Careful search for further light on this subject, will, I think, prove fruitless. James paraphrases it more than once, but vainly. If cross-examined, James, I imagine, would have said that it was largely a question of controlling interest or directing attention. Perhaps he would have frankly declined to explain it and asserted that it was elementary, indefinable, an immediate experience. That there is such a phenomenon of consciousness I should not wish to deny. All that is to be learned from the description given is that James did believe in some such form of decision, that it was a pure affirmation relied upon to resolve a deadlock (Brett, 1942, pp. 92-93; internal quotations from James, 1890, 2, p. 534).

These are strong words, but Brett's difficulties are well-founded. James was concerned with refuting the older associationist concept of the mechanical means by which ideas asserted themselves:

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9. This is a somewhat subtle point: there would be no way of determining whether effort was adventitiously aroused because its attachment to a particular set of ideas would merely indicate that sometimes the ideas seemed to be impulsive--that is, they stabilized in consciousness--while at other times they appeared to be non-impulsive, or easily inhibited by other ideas.

> The ideas themselves and their conflict have been held to constitute the total history of the mind, with no unaccounted-for phenomenon left over. Long before mutual inhibition by nerve processes had been discovered, the inhibitions and furtherance of one idea by another, had by Herbart been erected into a completely elaborated system of psychic states and dynamics. The English associationist school, without using the word inhibition, and in a much less outwardly systematic, though by no means less successful way, had also represented choice and decision as nothing but the resultant of different ideas failing to neutralize each other exactly (James, 1880/1920, pp. 208-209).

James retained this paradigm for ideo-motor action; the impulsive (or intentional) power of the idea itself is sufficient to enable it to inhibit competing ideas in consciousness. But he did not find this paradigm sufficient to describe the means by which non-impulsive ideas gain a hearing in consciousness because it was based on the mechanical notion of force. James writes that in the older paradigm, mental effort was connected with muscular effort. Muscular effort revealed the resistance of physical objects, defined as their force. Hence will came to be equated with muscular effort because will overcame a 'real' outer force. The notion of free-will was incompatible with this construction because the 'energy' necessitated by a 'free' action could not be accounted for by the laws of conservation. It was an 'extra' expenditure of energy, and upset the mathematical/mechanical balance of nature (see James, 1880/1920, pp. 215-216). James believed that "all such discussions rest on an anthropomorphization of outward force, which is to the last degree absurd" (James, 1880/1920, p. 216). He felt compelled--if his psychology was to be compatible with his philosophical commitment to free-will--to assert that the special mental effort was not simply the impulsive aspect of the idea itself. Furthermore, effort itself had to be defined as a totally mental phenomenon so that it could not be quantified (in measurable amounts) within James' own mechanical reflex psychology.

The result of James' unwillingness to quantify mental effort was to maintain it as an 'undefinable' or 'mysterious' property of the mind. As Brett indicates, the 'experience' of the phenomenon is all that is given.

James firmly believed that 'sensual' ideas had more impulsive power than 'ideal' motives:

> But the sluggard, the drunkard, the coward, never talk of their conduct in that way or say they resist their energy, overcome their sobriety, conquer their courage, and so forth. If in general we class all springs of action as propensities on the one hand and ideals on the other, the sensualist never says of his behavior that it results from a victory over his ideals, but the moralist always speaks of his as a victory over his propensities. The sensualist uses terms of inactivity, says he forgets his ideals, is deaf to duty, and so forth; which terms seem to imply that the ideal motives per se can be annulled without energy or effort, and that the strongest mere traction lies in the line of the propensities. The ideal impulse appears, in comparison with this, a still small voice which must be artificially reinforced to prevail. Effort is what reinforces it, making things seem as if, while the force of propensity were essentially a fixed quantity, the ideal force might be of various amount. But what determines the amount of effort when, by its aid, an ideal motive becomes victorious over a great sensual resistance? The very greatness of the resistance itself. If the sensual propensity is small, the effort is small. The latter is made great by the presence of a great antagonist to overcome (James, 1890, 2, pp. 548-549. See also James, 1880/1920, pp. 210-211).

'Effort' is necessary to ensure that non-sensual motives can potentially triumph. But the notion that effort was proportional to the resistance encountered was not a satisfactory resolution of James' difficulties. If effort is proportional to resistance, then effort can be seen as a mental force simply superadded onto non-impulsive ideas which gives them an equal or superior impulsive power compared to the impulsive ideas. Thus we would arrive back at the associationist paradigm--granted, by a circuitous route. Instead, James concludes that effort does not constitute a necessary part of moral ideas per se. "It appears adventitious and indeterminate in advance".[10]

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10. James 1880/1920, p. 212; see also James, 1890, 2, (contd.)

James does not claim that effort really is indeterminate or adventitious. The question as to whether it is adventitious or whether it is determined in advance, is for him, the question of whether or not the will is free (see James, 1880/1920, p. 218). Psychologically then, James can claim only that introspective experience points to the existence of such a feeling of effort. Brett's difficulties with the concept of effort are justified. James' rationale for disputing the associationist paradigm may be legitimate enough but the concept of effort he replaced it with is a philosophical concept which itself is unverifiable in either logical or empirical terms (see James, 1880/1920, p. 212; see also James, 1890, 2, p. 549).

If the exact nature of mental effort cannot be defined, its operations can be. Although there is no guarantee that mental effort will be aroused in conjunction with any given idea, when mental effort 'works' to hold an idea in consciousness, it can operate in two ways. It can hold a particular idea in the forefront of consciousness when the idea is of performing an action that the individual is 'reluctant' to undertake, so that his ideo-motor inhibitions are overcome and the action is performed. But it must also be able to hold abstract ideas before the mind so that they can be translated into ideas which have direct action potential. The discussion that follows will show that this interpretation of the dynamic functions of mental effort makes it possible to analyze James' concept of non-impulsive ideas in a way that maintains the structural unity of consciousness. But it will also be demonstrated that this interpretation of the non-impulsive ideas supports the conclusion that James' theory of volition is based on a functional dualism.

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10. (contd.) pp. 549, 572, where James states that by definition, mental effort could not be measured.

Volition with Effort and the Mundane World

In order to determine whether James has made an a priori distinction between those ideas which require mental effort to sustain them in consciousness and those which do not, or whether the use of mental effort is adventitiously determined by situational factors, it is necessary to look more closely at the situations where mental effort seems to be required in the psychological theory of volition. James states that "the normal...sphere of effort is thus to be found wherever non-instinctive motives to behavior are to rule the day" (James, 1890, 2, p. 536), indicating that an a priori distinction can be made between the two categories of ideas. But he also has to show that effort is not invariably attached to any distinguishable set of ideas in consciousness if he is to preserve mental effort as an adventitious force or quality. The most logical means of ensuring that mental effort operates without constraint (in the context of his psychological model), is to show that effort can be aroused in conjunction with ideas which are not 'foreign to the instinctive history of the race', and we will demonstrate that this is precisely what James does. In other words, James shows how an ordinarily 'impulsive' idea can take on a non-impulsive status so that it can only be enacted with mental effort. But it will also be shown that the circumstances which accompany thetransformation of an ordinarily impulsive idea into a non-impulsive idea are considered by James to be indicative of mental (or pathological) disturbances. Two other examples are also discussed wherein instinctive impulses appear to require effort for their discharge. The moral 'worth' of these examples will be shown to be mitigated by their 'front-door' perceptual origins and the fact that they have become ingrained in the individual's habitual repertoire so that they have more in common

with ideo-motor action than with 'true' ethical action. It will therefore be demonstrated that James did not use these 'anomalies' as the basis for a naturalistic, instinctive foundation for his theory of ethics. Finally, we will show that the use of the term 'moral' (in the psychological paradigm) to describe an act that requires mental effort is not equivalent to the meaning of 'moral' in the ethical sense of the moral philosophy. It will also be shown that James makes use of the philosophical meaning of 'moral' in his psychology when he discusses the relationship between impulsive and non-impulsive ideas in the so-called 'normal' individual, so that the apparent inconsistencies in the theory of volition can be resolved by unravelling the two intended meanings of 'moral'.

The most disturbing example James gives of the moral use of mental effort in the psychological paradigm concerns the drunkard's struggles to give up drink. He writes that "The craving for drink in real dipsomaniacs...is of a strength of which normal persons can form no conception" (James, 1890, 2, p. 543), and he argues that to the drunkard, the correct conception that drink in such quantities is harmful, is non-impulsive (see James, 1890, 2, p. 565). If the drunkard can transform this 'abstract' idea into the concrete idea that drinking this particular glass of brandy makes him a drunkard and can then keep this conception before his mind, James believes that he will soon cease to be a drunkard. Thus, he concludes, "The effort by which he succeeds in keeping the right name unwaveringly present to his mind proves to be his saving moral act" (James, 1890, 2, p. 565). This statement presents several problems: first of all, in spite of James' division of ideas into impulsive and non-impulsive categories on the basis of their instinctive/habitual status versus their 'extraordinary' status (see James, 1890, 2,

p. 536), he now seems to be implying that a non-impulsive idea is any idea that the individual is reluctant to attend to (the non-impulsive idea of the drunkard is the impulsive idea of the tee-totaller, and vice versa). Furthermore, the drunkard's dilemma appears to be resolved by discovering the correct conception of the situation, and James has already made it clear that decisions which can be made through a search for the correct conception of the situation do not require mental effort even though the individual feels that he has exerted effort (see James, 1890, 2, pp. 534-535). Finally, James appears to be equating morality with effort; the moral status of a decision is dependent upon whether or not the individual has expended mental effort in making it, and not in terms of the value of the action itself. Psychologically, morality is made synonomous with mental effort.

The same problems appear in the next example: James writes:

> The exhausted sailor on a wreck has a will which is obstructed. One of his ideas is that of his sore hands, of the nameless exhaustion of his whole frame which the act of farther pumping involves, and of the deliciousness of sinking into sleep. The other is that of the hungry sea ingulfing him. "Rather the aching toil!" he says; and it becomes reality then, in spite of the inhibiting influence of the relatively luxurious sensations which he gets from lying still (James, 1890, 2, p. 566).

James concludes his discussion of the sailor's predicament with the following statement:

> The trouble is to keep the mind upon a train of objects naturally so insipid. To sustain a representation, to think, is, in short, the only moral act, for the impulsive and the obstructed, for sane and lunatics alike (James, 1890, 2, p. 566).

This statement makes it difficult not to conclude that non-impulsive ideas are simply ideas that meet with resistance when they appear in the mind and that effort and morality are psychologically equated. But the examples appear in a somewhat different light when they are

put back into the context of James' discussion.

In making the distinction between instinctive and non-instinctive motives, James says that there is a normal ratio in the impulsive force of different motives which characterizes the health will (see James 1890, 2, p. 536, quoted above, p. 405). He goes on to write that the normal will can be distinguished from the pathological will because individuals with healthy wills need only apply effort when the idea is by definition non-instinctive (see James, 1890, 2, p. 536). Individuals suffering from pathological conditions of the will do not exhibit the normal ratio of impulsivity in regard to their motives, and James divides the pathological conditions of the will into two categories: these are the explosive will, and the obstructed will. He emphasizes that normal individuals may also be characterized as 'explosive' or 'obstructed' on the basis of whether they readily engage in 'heroic' or 'anti-impulsive' actions or whether they are inclined to be more hesitant than is customary in being aroused to action. But he maintains that the relation between impulsive and non-impulsive ideas is normal in these individuals and that their behaviour merely describes the opposite poles of a normal continuum (see James, 1890, 2, pp. 538, 547). He also makes it clear that the perception of reality is not disturbed in many victims of pathological conditions of the will: instead, the lives of the 'drunkards', 'sentimentalists', 'dead-beats', 'schemers', and 'failures' are "one long contradiction between knowledge and action, and who, with full command of theory, never get to holding their limp characters erect" (James, 1890, 2, p. 547). In the pathological conditions of the will, the normal relation between the impulsivity of ideas is disturbed so that ideas which would not normally require effort to hold them before consciousness in fact do require it.

James insists that the drunkard suffers from a pathologically

explosive will. Thus, in the drunkard's case, "The paths of natural (or it may be unnatural) impulse are so pervious...that the slightest rise in the level of innervation produces an overflow. It is the condition recognized in pathology as 'irritable weakness'" (James 1890, 2, p. 541). He then gives a clinical description of the explosive will which is summed up as follows: "Works on insanity are full of examples of these morbid insistent ideas, in obstinately struggling against which the unfortunate victim's soul often sweats with agony, ere at last it gets swept away" (James, 1890, 2, p. 542).[11]

Victims of the obstructed will present the opposite pattern: the impulsive process is insufficient or it is so excessively inhibited, that ideas in consciousness are not readily discharged. The sailor, interestingly enough, is placed in this category, for the impulse to save himself--which should automatically dominate consciousness--is inhibited by the impulse to sleep. James insists that the healthy will requires that the perception of the situation is right and "that action should obey its lead. But in the morbid condition in question the vision may be wholly unaffected, and the intellect clear, and yet the act either fails to follow or follows in some other way" (James, 1890, 2, p. 546), so that:

> The moral tragedy of human life comes almost wholly from the fact that the link is ruptured which normally should hold between the vision of the truth and action, and that this pungent sense of effective reality will not attach to certain ideas (James, 1890, 2, p. 547).

The normal relationship between the perception of reality and the immediate actions that such perceptions generate is broken in cases

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11. The works of Calmeil, Ribot, Maudsley, Winslow, Cowles, Burr, Mussey, and Clouston--all prominent psychiatric practitioners of the time--are cited by James in support of this conclusion.

of the obstructed will, and the victim can only act when he summons up mental effort in conjunction with the idea (see James, 1890, 2, pp. 546-547).

What implications do these examples have for James' broad theory of volition then? James' description of the will--particularly in regard to the role of effort in making ideas impulsive--concentrates heavily on pathological issues, and this emphasis is significant from a historical perspective. Late nineteenth century treatises on mental pathology focused on the 'healthiness' or 'unhealthiness' of the will, and James' discussion follows this practice. The aberrant behaviour of the psychotic or neurotic individual was often attributed to a failure of the will. Similarly, psychiatric treatments were divided into 'medical' cures--drugs, baths, bleeding etc.--and 'moral' cures --work, recreation, study, contemplation, music, crafts, discussion, etc.--specifically designed to correct faults in the will.[12]

James isolates two pathological conditions of the will--the explosive will and the obstructed will--contending that disorders of the will reflect an imbalance in either direction between the strength of the impulse or idea in the mind and its discharge into action. In the 'explosive' individual, ideas or impulses are too readily discharged, so that the normal inhibition process is mitigated. In the 'obstructed' individual, ideas or impulses are not discharged readily enough and the individual is 'over-inhibited'. The drunkard and the

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12. The emphasis on some type of failure of the will as an explanation for aberrant behaviour and the division of psychiatric treatments into medical and moral cures can be found in just about every psychiatric treatise of the period. The categorization and description of the various types of 'failure of the will' varies from text to text. There was also considerable controversy over whether such 'failures' were best cured by moral or medical means. See James, 1890, 2, pp. 541-546 for some examples of typical treatises; see also Esquirol, 1845; Von Feuchtersleben 1845; Griesinger, 1854/1861; Maudsley, 1867; Spurzheim, 1817; and Sweetser, 1843.

sailor both need to use mental effort to correct the imbalance--the drunkard to hold the 'non-impulsive' notion that 'taking this particular drink makes him a drunkard' long enough so that he will refrain from drinking the liquor, and the sailor to overcome the obstructing idea of sleep by concentrating on the idea of pumping water out of the boat. It should be noted that in both of these situations, arriving at the correct conception of the situation should be sufficient to allow the correct idea to discharge automatically, according to James' decision-making model. Neither the sailor nor the drunkard are called upon to make decisions of the fifth type. Instead, effort is required to repair the pathological condition of the will so that the normal ratio between impulsive and non-impulsive ideas can be restored.

Psychologically, all that moral action can mean (according to James), is that effort is applied to a non-impulsive idea. It is therefore submitted that James is defining 'morality' in the nineteenth century psychiatric sense--that is, 'moral' describes a method of correcting a pathological imbalance whereby the individual concentrates on the correct conception of his situation. The word 'moral' in this psychological or psychiatric sense is opposed to physical or medical methods, and has to be distinguished from the correlation James makes between moral and ethical actions in the moral philosophy. James is not using 'moral' to describe an ethical position which makes a value judgement as to the 'rightness' or 'wrongness' of the idea. Furthermore, the medical use of 'moral' contrasts with the philosophical use of 'moral' in those passages in the Principles which correlate moral action with the will to believe (see James, 1890, 2, p. 672). Psychological effort is necessary to hold any non-impulsive notion in the forefront of consciousness, but in the normal, as

opposed to the pathological, individual, such effort is only necessary "wherever non-instinctive motives are to behavior are to rule the day" (James, 1890, 2, p. 536).

Finally, it is significant that James places the sailor on the raft in the obstructed-will category. There is no reason to assume that the sailor ordinarily suffers from an obstructed will. What James seems to be implying is that the drastic situation engenders a disruption of the normal ratio between impulsive and non-impulsive ideas so that the sailor's condition is at least temporarily pathological. His action is therefore moral in the psychological sense, but not in the ethical sense. The next two examples support this interpretation and add weight to the hypothesis that James did not intend to use the instincts or impulsive ideas as the foundation for his theory of ethics, and that his philosophical conclusions led him to isolate two conflicting sets of tendencies existing side by side in the same individual.

James makes only one clear equation between instinctive behaviour and moral action in the ethical sense, and he makes it in regard to maternal behaviour:[13]

the passionate devotion of a mother--ill herself perhaps--

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13. It is significant that James does not make use of this example in his chapter on the will; it appears in his discussion of instinctive behaviour and he never refers to it again in the Principles. He obviously did not intend to use it as the foundation for a theory of ethics based on instinct. The sympathetic instinct is the only other instinct that is specifically linked with moral action. James' description of the sympathetic instinct is short; he refers to the maternal instinct to protect the child using this as 'evidence' that sympathy must, in some instances, have an instinctive basis (see James, 1890, 2, p. 410). His other examples seem to involve a fortuitous arousal of the sympathetic instinct--the action, for example, of the Good Samaritan--and he concludes that the sympathetic instinct "is peculiarly liable to inhibition from other instincts which its stimulus may call forth" (James, 1890, 2, p. 411). Habits, the instincts of love and hate, and the hunting and pugnacious instincts all inhibit the sympathetic instinct (see James, 1890, 2, p. 411).

> to a sick or dying child is perhaps the most simple beautiful moral spectacle that human life affords. Contemning every danger, triumphing over every difficulty, outlasting all fatigue, woman's love is here invincibly superior to anything that man can show (James, 1890, 2, p. 440).

Here we have a conflict between two impulsive ideas so that the mother's dilemma superficially appears to parallel the sailor's: if she relaxes her vigilance the child may perish but if she does not rest, she herself might die. Her parental instinct and her impulse to rest are in conflict, and effort is necessary to maintain the one impulse over the other. There is no question of pathology here, however, for the mother's dilemma differs from the sailor's in one significant regard. The correct conception of the situation is not absolutely pre-determined here. In a sense, the conflict is between the value of one life over another, for the mother puts her own life in danger by tending to the child. But the situation is not totally unambiguous; the mother's 'choice' to put the child before herself does not arise as an 'abstract conception, unaccustomed reason, or motive foreign to the instinctive history of the race' (see James, 1890, 2, p. 536). Instead, noble as her choice might be, her impulse to choose the child is determined within the instinctive-ideo-motor paradigm,[14] and to desert the child, might very well, in James' view, be a non-impulsive notion which could only take command of consciousness through the exertion of mental effort. James had a rather sentimental view of female sacrifice, and depicts in lurid details the changes that are wrought in the woman's repertoire of impulsive, ideo-motor patterns when she becomes a mother (see James, 1890, 2, pp. 439-440). James makes it clear that he believed that the parental instinct is stronger

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14. See James, 1890, 2, p. 536, for a list of those motives, ideas, or considerations which have the most impulsive power in the mind.

in women than in men (see James, 1890, 2, p. 439), and his praise of the woman's 'moral instinct' is perhaps most significant as a piece of social mythology--that is, that women are more instinctively oriented towards sacrificing themselves for their children than are men. And while he ennobles the woman he simultaneously makes her a victim of her instincts and habits, so that the ethical significance of her action (in the philosophical sense) is minimized. This tendency of James' becomes clearer in the next example:

> Humbler examples show perhaps still better what chronic effects duty's appeal may produce in chosen individuals. John Stuart Mill somewhere says that women excel men in the power of keeping up sustained moral excitement. Every case of illness nursed by wife or mother is proof of this; and where can one find greater examples of sustained endurance than in those thousands of poor homes, where the woman successfully holds the family together and keeps it going by taking all the thought and doing all the work--nursing, teaching, cooking, washing, sewing, scrubbing, saving, helping neighbours, "chöring" outside--where does the catalogue end? (James, 1907/1949, pp. 223-224). [15]

In this example, James intimates that the process of coping with mundane difficulties is more a matter of adaptation than of moral action in the ethical sense. The women have adapted to the harsh demands of their environments so that if their actions <u>are</u> moral, they are moral in a habitual, rather than in an extraordinary sense:

> The stimuli of those who successfully respond and undergo the transformation here, are duty, the example of others, the crowd-pressure and contagion. The transformation, moreover, is a chronic one: the new level of energy becomes permanent. The duties of the new offices of trust are constantly producing this effect on the human beings appointed to them. The physiologists call a stimulus "dynamogenic" when it increases the muscular contractions of men to whom it is applied: but appeals can be dynamogenic morally as well as muscularly (James, 1907/1949, p. 223;

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15. It is important to note that the effects of 'duty's appeal' are not restricted to women, in light of the remarks just made regarding James' view of women and the maternal instinct. Immediately after the example given above, James turns his attention to situations where men act in similar 'heroic' ways in carrying out what they consider to be their 'duty' (see James, 1907/1949, pp. 225-229).

see also James, 1907/1949, p. 218).

But are these 'true' moral actions in the ethical sense? James is insisting that the conditions which inspire them are anything but 'foreign to the history of the race'.[16] The actions are undertaken in response to empirically generated conceptions of the situation. Moreover, the individual continues to behave in a so-called moral fashion because she/he has developed certain habitual ways of thinking about the world she/he inhabits. The ideas that inspire the behaviour are impulsive--they at least make some connection with the woman's maternal instincts--and the ideas (presumably the desire to rest) which must be inhibited are also impulsive or instinctive. The conflict is therefore between two sets of impulsive ideas, and the genesis and the resolution of the conflict can be accurately described by the ideo-motor paradigm. Ideo-motor action patterns are developed in response to instinctive impulses and stimuli from the sensible world. Furthermore, James makes it clear that the process of learning a new skill initially required concentration on the properties of the stimulus and the kinaesthetic cues that are 'recalled' when once the action has been attempted (see James, 1890, 2, p. 493). As skill increases, '"we become...acutely aware <u>in advance</u> of the amount and direction of energy which it [the task] is to involve" (James, 1890, 2, p. 493). Finally, when we have mastered the skill, the bare idea of the action is sufficient to trigger the appropriate movements, the 'supernumerary consciousness' is dropped, and the action takes on a 'quasi-automatic' appearance (see James, 1890, 2, p. 497). Attention, concentration, and muscular exertion are all

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16. Note the emphasis here on the example of others, crowd pressure and contagion in contrast to James' insistence that the most 'peculiarly' moral judgements are made in 'lonely emergencies' and are <u>not</u> impressed on the individual through 'public opinion' (see James, 1890, 2, p. 672, quoted above, p. 384).

involved in developing ideo-motor skills, and these demands are all commensurate with the situation of the woman-of-all-work. That is, the development of ideo-motor skills and their continued utilization often makes great demands on human energy resources. Ideo-motor actions do not, however, demand any special fiat of mental effort--either for their initial development or for their enactment when they have become integrated into the behavioural repertoire of the individual.

James' designation of the activities of the woman-of-all-work as moral reflects a value judgement on his part as to the overall worth of the activities. Since this example appears in his popular moral philosophy,[17] it is hardly surprising that he should emphasize the worth of the activity. But his conclusion that these activities have a moral value is somewhat inconsistent with his broad theory of volition and his philosophical theory of the will to believe as will be shown below. That he did not intend to equate the woman-of-all-work with the man who affirms his own free will is evidenced by his insistence that she has gotten into the 'habit' of taking on extra duties. The nature of the energy manifested by the woman-of-all-work is best described in ideo-motor terms and not in terms of the mental effort that is necessary to believe in unverified ideas.

The Translation of Non-impulsive Ideas and their Genesis as Spontaneous Variations

James makes a categorical distinction between those ideas which

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17. "The energies of men" was originally read before the American Philosophical Association in 1906. In 1907, James changed the title to "The powers of men", edited out the technical discussion, and published the paper in the American Magazine. The shorter and less technical 1907 version of the paper was subsequently reprinted several times under the original 1906 title.

discharge themselves automatically into action, and those which require mental effort to keep them in consciousness long enough to stabilize. But he then seems to confuse this distinction between the impulsive/instinctive ideas and the non-impulsive/non-instinctive ideas when he shows that the mother, the sailor and the woman-of-all-work all perform moral actions because they use mental effort to sustain impulsive ideas in consciousness, and that the drunkard's assent to the non-impulsive notion that drinking the drink makes him a drunkard is a moral action. Either James did not intend the distinction between instinctive and non-instinctive ideas to be definitive or he waived it by insisting that any idea can become a non-impulsive idea, depending on circumstances. But we have also shown that in each of these examples, James has intimated that the normal ratio between impulsive and non-impulsive ideas no longer applies. Their actions are therefore moral in the psychological sense of the term but not in the ethical sense. The mother and the woman-of-all-work are moral because they conform to societal ideals but their actual activities have more in common with the ideo-motor action paradigm than with 'true' or ethical morality which is correlated with the will to believe.

It is reasonable to ask why James called all of these actions moral or why he bothered to refer to them at all. First of all, the use of pathological examples provides insurance for his insistence that effort is free to vary and that it is not superadded to a determinable class of ideas. If healthy individuals only need to use mental effort in conjunction with non-instinctive ideas, then there is no guarantee that the appearance of effort is adventitious. If, on the other hand, he can show that disturbed individuals must use mental effort to make normally impulsive ideas discharge, then he has some guarantee that mental effort operates fortuitously.

Finally, these psychological anomalies provide a potential connection between volition with effort and volition without effort that was to become essential to his pragmatic theory of truth. The essential connection between impulsive and non-impulsive ideas lies in the need to 'translate' non-impulsive ideas into impulsive ideas. One of the defining characteristics of non-impulsive ideas is that they do not typically have immediate implications for action. A belief in one's own free will is not immediately associated with any definable set of kinaesthetic cues and so it does not discharge into physical movement.

James accounted for the quasi-automatic appearance of ideo-motor actions with the proviso that consciousness tends to desert mental processes when it is no longer necessary. Thus, the perception of the pin was sufficient to prompt the individual to pick it up without interrupting his conversation. This is a defining characteristic of ideo-motor-action--the more 'habitual' an ideo-motor pattern is, the less attention has to be paid to its execution. Non-impulsive ideas are therefore competing with ideo-motor patterns that are so well-established that they have taken on a quasi-automatic status and these ideo-motor ideas are not easily inhibited. If non-impulsive ideas are to prevail, the non-impulsive idea must be attended to in consciousness and it must then be translated into an idea that can be acted out. Until the idea has been sufficiently attended to and translated into an impulsive idea, it cannot be said to have stabilized in consciousness. But <u>how</u> non-impulsive ideas could be translated into impulsive ideas is not a question that admits of an immediate <u>a priori</u> solution, and James found the answer, not in his study of the 'normal' consciousness at work, but in the pathological condition of the drunkard's explosive will.

Wiener gives the most interesting interpretation of what James meant when he argued that foregoing drink was a non-impulsive notion for the drunkard. Non-impulsive ideas, says Wiener, are often given in universals--that is, they consist of abstract statements of what would be 'good'. Impulsive ideas, on the other hand, are particular ideas of acts that can be immediately performed. Thus, in the case of the drunkard, the non-impulsive idea is that 'drinking is injurious' while the impulsive idea presents itself in the perception of the glass of brandy. What James means to emphasize therefore, is that the drunkard must think concretely; he must think in particulars rather than in universals so that the perception of the glass of brandy immediately gives rise to the inhibiting idea that 'drinking this specific glass of brandy makes me a drunkard'. Wiener calls James' pragmatism 'nominalistic', meaning that James believed that impulsive ideas are ideas of particulars (see Wiener, 1965, pp. 121-122). Impulsive motives therefore, are ideas which suggest immediate and specifiable action; abstract ideas are non-impulsive motives because they are unattached to any specifiable action patterns. And in this sense, the ideas which initiate the mother's and the woman-of-all-work's activities are not non-impulsive. The instigating ideas may connect with universal notions of 'good' but they are neither abstract, nor do they require translation. They are ideo-motor ideas which are in danger of being inhibited by other ideo-motor ideas.

The mechanics of the translation process will become clearer in the discussion of James' pragmatic theories of meaning and truth. For now, it is sufficient to conclude that the likelihood that the idea in consciousness will be released into movement depends on the exact construction of the idea in consciousness. Once the non-

impulsive idea is translated into a 'particular' idea, it is immediately expressible in action. James provides the basis for Wiener's interpretation when he says that ideas, or objects of thought are not necessarily simple. In fact, they may consist of an extremely complex set of propositions (see James, 1890, 2, p. 569). Making a decision means that the total object of thought is changed so that: "a new object is before our thought; and where effort exists, it is where the change from the first object to the second one is hard" (James, 1890, 2, p. 570). Getting the structure of the new object right presents the difficulty. Once this is achieved, the new object must, by definition, be impulsive.[18] Mental effort therefore serves two purposes; it must hold the non-impulsive idea before consciousness to allow the translation process to be effected, and once the translation process is completed, it must hold the idea in consciousness against competing ideas. The non-impulsive idea has become impulsive in a dynamic sense but it has not necessarily become impulsive in a categorical sense, and the tension between instinctive and non-instinctive motives still holds.

The distinction between impulsive and non-impulsive ideas is also made on psychogenetic grounds. While James rejected Darwin's instinctive foundation for moral action, the development of his theories of volition and ethics was influenced by Darwin from another, rather unexpected direction. Schneider writes that by 1869 James had begun to make the distinction between scientific and moral attitudes (see Schneider, 1942, p. 132). In 1868 James reviewed Darwin's Variation of animals and plants under domestication and he was exposed

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18. Wiener refers to James' reference to Aristotle's doctrine of practical syllogism to support his interpretation of James' meaning here (see Wiener, 1965, pp. 121, 267; see also James, 1890, 2, p. 565).

to Darwin's discussion of spontaneous variation. Darwin could offer no biological reason for spontaneity; according to Schneider, Darwin "accepted novel forms as brute facts" (Schneider, 1942, p. 132). James was intrigued:

> From this time on the concepts of spontaneity and struggle became prominent themes in James' moral philosophy. ...He saw little value in the "survival of the fittest" formula, but he emphasized the fact of spontaneity in moral action and moral sense. His exposition of this theme culminated in the famous last chapter of his Psychology, in which he argued that what the Kantians regarded as a priori, necessary forms of the understanding, could be regarded in Darwinian analysis as spontaneous variations or postulates, not derived from experience, but tested in experience. It is significant that under the head of such spontaneous postulates he placed aesthetic and moral principles. He emphasized especially that moral principles arise, not from habit and convention, but from "lonely emergencies" (Schneider, 1942, pp. 132-133).

Ethical ideas arise as spontaneous variations and, as Schneider reminds us, in the context of lonely emergencies, and not in habitual situations (see also James, 1890, 2, p. 672). Eventually, as Wiener points out, James was to extend the notion of spontaneous chance "to the whole of nature and its laws" (Wiener, 1965, p. 100; see also James, 1890, 2, p. 672). Thus, Darwin's intended biological conception was elevated to a metaphysical status in James' psychology and philosophy, and the genesis of James' metaphysic is to be found in his conception of moral and aesthetic tendencies as spontaneous variations.[19]

James' use of the biological concept of spontaneous variation to account for the genesis of ethical ideas serves as an introduction to the examination of the non-impulsive ideas which normally require mental effort to stabilize in consciousness. Non-impulsive ideas--described by James as "all far-off considerations, all highly abstract

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19. The philosophication of evolutionary postulates and the genesis of these postulates in the psychology will be discussed in Chaps. 7, 8 and 9.

conceptions, unaccustomed reasons, and motives foreign to the instinctive history of the race" (James, 1890, 2, p. 536)--will be shown to compete with the impulsive ideas for a hearing in the stream of consciousness. The parameters of the conflict between the two sets of ideas is therefore the next major problem which confronts us. But first, it is necessary to briefly examine the relationship between James' psychological model of volition and his philosophical theory of the will to believe in order to show why psychology finally proved an inadequate vehicle for the expression of James' philosophical commitments and why the fundamental clash between the two sets of ideas had to be expressed in philosophy.

The Problem of Free Will in Relation to the Psychology[20]

> In James, the transition from psychology to the larger problems of philosophy appears to occur on the question of Free Will. His philosophy avows itself a free-will philosophy, just as his psychology is voluntaristic; and for the same reason--viz., that he is a true Darwinian, a champion of real novelty (Knox, 1914, p. 41).

Although Knox seems to burden Darwin with a philosophical position that does not appear in any of his biological writings (and is contradicted in his private psychological writings--see Gruber, 1974), he is correct in stating that James finally made the transition

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20. The following is not intended as a thorough examination of James' moral philosophy. Rather, some of James' ethical writings are briefly examined for the light they shed on the psychology. James' moral philosophy--particularly the will to believe--has been widely commented on. See, for example, Wild, 1963; Wild, 1969; Brennan, 1961; Wiener, 1965; Roth, 1969; Roberts, 1962; Stroh,1968; Bixler, 1926; Bixler, 1942; Beck, 1960; Doud, 1968; Kuklick, 1977; Knox, 1914; Williams, 1942; Brett, 1942; Schneider, 1942; Roth, 1967; and Perry, 1935/1974. For the reactions of James' contemporaries to the will to believe, see Skrupskelis, 1977, pp. 11-12; Perry, 1935/1974; and Wiener, 1965. While writers such as Wild, Brennan, Perry, and Roth (for example) have a very positive regard for James' concept of the will to believe in particular and for his moral philosophy in general, writers such as Brett and Schneider are unconvinced. Brett (contd.)

from psychology to philosophy over the issue of the will and the limits of its operations. While the psychology of volition appears to have been constructed to provide a 'scientific' foundation for James' philosophical commitments, the transition from philosophical motives to psychological constructs was difficult:

> Since the free-will problem forms one of the nodal points wherein psychology and philosophy inosculate, James is, in his Principles, confronted with an awkward crux of method. How is he even to state the problem in psychological terms, when the solution thereof must take him far beyond the limits of psychology as a natural science--the limits within which alone psychology can lead an autonomous existence? (Knox, 1914, p. 42).

James was aware that the problem of free will could not be resolved within the confines of a naturalistic, scientific psychology:

> The question of fact in the free-will controversy is thus extremely simple. It relates solely to the amount of effort which we can at any time put forth. ...Now, as I just said, it seems as if the effort were an independent variable, as if we might exert more or less of it in any given case. ...But,on the other hand, there is the certainty that all his effortless volitions are resultants of interests and associations whose strength and sequence are mechanically determined by the structure of that physical mass, his brain; and the general continuity of things and the monistic conception of the world may lead one irresistibly to postulate that a little fact like effort can form no real exception to the overwhelming reign of deterministic law. Even in effortless volition we have the consciousness of the alternative being also possible. This is surely a delusion here; why is it not a delusion everywhere?(James, 1890, 2, pp. 571-572).

He concludes therefore "that the question of free-will is insoluable on strictly psychologic grounds" (James, 1890, 2, p. 572) and ends his discussion with an argument that believing in free will is a logical, as well as a personal choice (see James, 1890, 2, pp. 573-579).

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20. (contd.) refers to James' "ill-fated will to believe" (Brett, 1942, p. 92), while Schneider speaks of the "pathetic" will to believe (Schneider, 1942, p. 310). James came to regret using the phrase 'will to believe', claiming that it "has been the source of utter misunderstanding of my essay" (James in a letter to Baldwin, quoted in Perry, 1935/1974, 2, p. 245).

The problem of whether or not the will is free does not admit of a psychological answer (or even a determinative philosophical answer) and it would be unreasonable to expect James to provide one. But the positivistic restraints James imposed on the scope of the science of psychology and the demands of his personal philosophical creed combined to limit the scientific and philosophical scope of his theory of volition. Initially, as Kuklick states, James' conception of mind was based on the notion that the will was free and the mind itself created the world it came to know (see Kuklick, 1977, p. 171; see also James, 1878/1920, p. 67). But by the 1880's James had sharply limited the category of ideas where belief was a necessary and legitimate precursor to the reality of the object in question. And, as Kuklick acutely points out, James "compromised the consistency of his thought and again allowed moral and scientific postulates to conflict"(Kuklick, 1977, p. 173; see also James, 1890, 2, p. 573). This conflict (the scientific side exemplified by the heavily mechanical reflex action paradigm that forms the foundation of James' theory of volition) made it impossible for James to maintain the original 'looseness' of the teleological paradigm he had adopted in 1878.[21]

The mind was coerced from without; it was also internally determined by the limitations of its structure. This 'deterministic' construction was to be balanced by James' philosophical pluralism wherein he insisted that the 'parts' of the universe:

> have a certain amount of loose play on one another, so that the laying down of one of them does not necessarily determine what the others shall be. It admits that possibilities may be in excess of actualities, and that things not yet revealed

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21. The internal difficulties of the 1878 paradigm have already been discussed in Chap. 2. James' rejection of this earlier position is therefore not a weakness in his psychology.

> to our knowledge may really in themselves be ambiguous. Of two alternative futures which we conceive, both may now be really possible; and the one becomes impossible only at the very moment when the other excludes it by becoming real itself. Indeterminism thus denies the world to be one unbending unit of fact. It says there is a certain ultimate pluralism in it; and, so saying, it corroborates our ordinary unsophisticated view of things. To that view, actualities seem to float in a wider sea of possibilities from out of which they are chosen; and somewhere, indeterminism says such possibilities exist, and form a part of truth (James, 1884/1911, pp. 150-151).

The notion of 'a certain amount of loose play' in the physical world corresponds to James' notion that the expenditure of mental effort is "adventitious and indeterminate in advance" (James, 1880/1920, p. 212). But from a psychological perspective all that he can conclude is that "After a certain amount of effort of attention has been given to an idea, it is manifestly impossible to tell whether either more or less of it might have been given or not" (James, 1890, p. 572).

The amount of effort might be pre-determined or it might be free; all that the psychologist is free to conclude is that effort appeared to be present or absent in a given case. As a psychologist, all that James could do was to try and construct a paradigm which would leave room for the adventitious appearance of mental effort. To this end, he made the separation between the feelings of mental and muscular effort (see James, 1880/1920, pp. 215-217). By separating mental and muscular effort into two ontologically distinct categories, James made sure that mental effort could not be assimilated under the rubric of scientific measurement. He further stated that from a psychological perspective, free will would consist solely in the attention given to an idea which makes it 'real' for the possessor (see James, 1890, 2, pp. 569-573; see also James, 1880/1920, p. 218). On the one hand, James has placed mental effort beyond the scope of scientific quantifiability; on the other, he has made it clear that this does not mean that mental

effort necessarily arises on a purely fortuitous basis. He then concludes that he is justified ethically and philosophically, if not scientifically, in asserting that free will is a genuine possibility and that "Freedom's first deed should be to affirm itself" (James, 1890, 2, p. 573). This of course, is the most famous and far-reaching postulate generated out of James' will to believe, and it is important to remember that this is a philosophical and not a psychological conclusion. He has constructed his psychological theory of volition to allow for the possibility that the will is really free, but he believed that he had remained true to the limitations of the psychological paradigm and the will to believe is not synonomous with volition with effort. The problem arises in terms of the definition of effort. While James insisted that mental effort might well be pre-determined in advance, he constructed his definition so that mental effort could not quantified scientifically. The inclusion of the 'mysterious' fiat of effort thus limits the scientific applicability of the theory of volition.

The opposition that James maintained between science and morals in the Principles is also important.[22] James conceded that within the context of psychology, he had to be a determinist (see Kuklick, 1977, p. 184), and he placed stringent psychological and philosophical restrictions on the range of ideas which could be believed on the basis of faith alone. He also placed restrictions on the range of ideas which could result in physical movements: he told Peirce that he had cribbed his theory of the will to believe from Renouvier (see Perry, 1935/1974, 2, p. 209), but he went further than Renouvier in a naturalistic direction, claiming that will could only select within the field of reflex

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22. See James, 1890, 2, p. 573; James makes the same distinction in "The will to believe" (see James, 1896/1911, pp. 22-23).

possibilities (see Perry, 1935/1977, 2, p. 89). This simply means that James was insisting upon an automatic discharge of muscular movement when any idea dominated the field of consciousness. At the same time, the will can only effect movements already in the individual's repertoire and the concrete consequences of will actions are always given in terms of effected movements while willing itself is limited to the holding of an idea in consciousness (see James, 1890, 2, p. 560).

The philosophical limitations on the scope for the will to believe correspond with James' theory of reality as it was outlined in chap. 4. The will to believe is only to be used in cases where the decision is live, momentous, and forced, and where the decision cannot be made on the basis of empirical evidence (see James, 1896/1911, pp. 2-3, 22-31). These restrictions are the philosophical concomitants of the psychological circumstances where effort is deemed necessary.[23] Thus, the real function of mental effort appears to be to provide the mental force necessary to sustain belief in options chosen according to the corollaries of the will to believe. James did not explicitly restrict the scope for effort in his psychology. In his philosophy, however, he was fervent in asserting that the only legitimate use of the will to believe was in cases where the evidence was insufficient and the decision imperative. Thus, in 1904 he wrote to Hobhouse: "My essay hedged the license to indulge in private over-beliefs with so many restrictions and signboards of danger that the outlet was narrow enough" (James, quoted in Perry, 1935/1974, 2, p. 245). To Lutoslawski he wrote: "My general complaint is that you express the things as if there were so much freedom. I believe it to exist, but to have very narrow play" (James, 1900, quoted in Perry, 1935/1974, 2, p. 215). More

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23. See James, 1890, 2, pp. 534-535; see also pp. 391-394 above, for a discussion of the circumstances which provoke decisions of the fifth type.

specifically, James claims that "future human volitions are the only ambiguous things we are tempted to believe in" (James, 1884/1911, p. 155), but he then limits the scope for these volitions because the alternatives for human action that present themselves "spring equally from the soil of the past" (James, 1884/1911, p. 157). He finally argues that no one is really "tempted to produce an absolute accident, something utterly irrelevant to the rest of the world" (James, 1884/1911, p. 157).

Perry gives a colourful assessment of James' view of the scope for free action: "He applauded Blood's remark that the universe was 'game-favoured as a hawk's wing', but he did not want his game too high. He liked simplicity, purity, and wholesomeness, in life as well as in nature" (Perry, 1948, p. 217).

The relationship between volition with effort and the will to believe can now be summed up: the justification for the will to believe cannot be derived from scientific postulates but James carefully constructs his psychology so that the reader is forced into a consideration of its philosophical implications (see James, 1890, 2, pp. 534, 569-579). It therefore seems reasonable to assume that he intended his philosophical conclusions to interrelate with his psychological constructions. This has important implications in considering what the precise function of mental effort is in James' psychology and in his philosophy. The scope of the will to believe is sharply restricted so that psychologically speaking, any belief that requires the will to believe must also require mental effort. But mental effort is not restricted to beliefs requiring the will to believe in the psychology although James makes it clear that the use of effort for ordinarily impulsive ideas occurs only in limited and pathological situations. The problem is to decide what the psychological scope of the options

is for volition with effort in normal individuals. If we are entitled to use the will to believe in special cases only, is effort, properly speaking, to be restricted to such cases or did James really mean to allow it a wider scope within the normal range of motives and situations in the psychology? This question can only be answered after an examination of the function of volition with effort in relation to the 'normal' range of non-impulsive ideas.

The following section therefore will examine the relationship between volition with effort and the non-impulsive ideas in order to determine finally whether or not James' psychological theory of volition is itself functionally dualistic.

The Worlds of Freedom in James' Moral Philosophy

Bixler writes that:

> The organism, it appears, has two aspects or two sets of functions; one, biological, acquisitive, competitive; the other, spiritual, reflective, appreciative. It lives, also, in at least two kinds of environment; one is physical, offering food and shelter which must be fought for competitively; the other is the spiritual world of ideas, purposes, and causes which exist to be shared rather than divided and are not eliminated but enhanced by being possessed. This makes the notion of survival more ambiguous than ever, just as it makes that of adjustment to environment very unclear. As an animal or bodily organism man adjusts his physical environment to his needs. As a reflective human being he adjusts himself appreciatively to the needs of his fellows and to the world of ideas (Bixler, 1942, p. 64).

This is a clear summary of the two sets of functions performed by the individual; it is also a clear summary of the problem before us. Are the two sets of functions compatible or has James developed a theory of volition wherein the two sets of functions are opposed to one another so that instinctive tendencies actually clash with 'ethical' tendencies? The following discussion of James' moral philosophy will show that he has in fact constructed a two-man theory of volition so that there is

a built-in clash between instinctive and non-instinctive tendencies.

While Bixler isolates two sets of functional tendencies (adaptive and spiritual) Wild provides an impressionistic summary of the characteristics of the worlds which makes these competing demands on the individual. The natural world and its demands are contrasted with the demands of the so-called worlds of freedom, and Wild's summary epitomizes the conflict between the two modes of reality:

> But whatever we may call it, his ethics are not based on logical or factual constraint, or natural necessities of any kind. James sharply distinguishes the worlds of freedom from the realm of nature, which is dominated by regular tendencies and laws. The moral world, on the other hand, satisfies no natural want or need. It may lead to the sacrifice of life. It does not bring us either happiness or pleasure, but rather hardship, suffering, and pain. It is a free creation of man that is brought forth by an unforced choice that wells up spontaneously from the depths of human existence.
>
> If we are to become moral, we must choose this by a real choice that persists and endures through the history it initiates. When this choice really takes place and stirs up others to embark on the strenuous path, it brings other aims and values in its train. Among these are serious engagements, the most intensive and highest energies of man including those of inner work, negative decisions, and "the breaking of rules which have grown too narrow for the actual case", hardship, loneliness, tragedy, and the courage to overcome these obstacles, transcending ideals, the passionate devotion that these inspire, and, finally, the real meanings which alone can support this devotion (Wild, 1969, pp. 282-283; internal quotation from James, 1891/1911, p. 209).

This seems a somewhat surprising statement given James' commitment to evolutionary theory. Wild (unlike Bixler) implies that the mundane or natural world does not make any demands on the individual that cannot be overcome (because it is dominated by regular laws and tendencies), and that all struggle and sacrifice takes place in the ethical worlds of freedom. We have already seen that James admitted that mundane or natural circumstances could present tremendous difficulties for the individual--witness the sailor, the mother, the woman-of-all-work, and finally, the drunkard. But if James admitted that all of these individuals were up against difficult situations, we have also seen that

James constructed the ideo-motor paradigm in such a way that the individual's relationship with the sensible world came to be conducted in a largely quasi-automatic way. Adjustment to the sensible world was based on instinctive tendencies which rapidly solidified into habits. The relationship between evolution and adjustment is described in the process wherein the numerous and often conflicting instincts are transformed into habitual patterns of behaviour. Choices exist for the individual but they are largely predicated on his past experiences in the sensible world; he has the 'data' before him. Thus, while Bixler is correct in emphasizing that the individual is equipped with a 'biological, acquisitive, and competitive' function which facilitates his adaptation in the physical world, James' theories of reality and volition are based on a comptaiblity between the structures that the individual is equipped with and the demands of the natural world. If the natural world is hazardous, the individual is innately equipped with the means of coping. James does not view the individual's struggle for survival in the physical world as the primary problem. He is concerned with the ethical struggle the individual makes (or should make), to change the mundane world into a 'better' world. The biological concept of spontaneous variation is transformed so that it describes the adventitious appearance of ethical ideas. Similarly, the real struggle for existence is to take place in the ethical worlds of freedom and not in the biological arena. The biological postulates of evolutionary theory are thus transformed into the framework for the moral philosophy.

Freedom in the mundane biological world of survival is largely illusory according to James: the individual feels free because his actions follow upon his desires or ideas. In reality, he feels free precisely because he has made such a successful adjustment to the

exigencies of the external world. By way of contrast, in the ethical worlds of freedom:

> every dilemma is in literal strictness a unique situation; and the exact combination of ideals realized and ideas disappointed which each decision creates is always a unique situation without a precedent, and for which no adequate previous rule exists (James, 1891/1911, p. 209).

As Wild shows, James intended a radically different structure for the worlds of freedom as opposed to the sensible world of mundane events. Actions in the worlds of freedom satisfy no natural want or need; they are dominated by no determinate tendencies; they are free creations as opposed to conditioned responses; they are choices, rather than the end results of natural processes; serious engagement is required, and they call forth intensive mental energy, hardship, and loneliness along the way. James believe that the potential for the strenuous life exists in all men (see James, 1891/1911, p. 211; see also Wild, 1969, p. 283). Thus man is as naturally predisposed towards moral action as he is towards ideo-motor action:

> The capacity of the strenuous mood lies so deep down among our natural human possibilities that even if there were no metaphysical or traditional grounds for believing in a God, men would postulate one simply as a pretext for living hard, and getting out of the game of existence its keenest possibilities of zest (James, 1891/1911, p.213).

Within the 'sensible' or mundane relationship between man and nature, the external world makes demands on the individual and forces a reaction; and the individual, in pursuit of his biological needs, makes demands on the environment. There is a pre-determined harmony built into the relationship so that the hazards for the individual are minimized (see Chap. 5, p. 334). But in the case of moral action, as both Reck (1967, pp. 31-32), and Wild (1969, pp. 282-283), point out, the demand exists solely in the individual. In his essay "The moral philosopher and the moral life" James postulates that good only

exists when sentient beings exist to demand it:

> In this essay James insisted that "the essence of the good is simply to satisfy demand", demand existing only in beings with sentience. Unless there are sentient beings who make demands which are satisfied, there is no good; and unless there are sentient beings who make demands on one another, there is no obligation. No matter how minute the demand or the sentient being who makes it, that demand has a role to play in the moral universe. Morality arises because demands conflict, and moral choice is required to decide among demands. The standard for moral choice is the principle which calls for the most inclusive satisfaction of demands. It holds as best that course of action or that situation in which all demands are satisfied. Of course this state of affairs is an ideal, never a reality. Still the moral imperative commands the election of acts which maximize satisfactions. On James' account the moral universe is inveterately democratic. Each demand has an equal claim with every other demand for satisfaction. This moral universe is, consequently, pluralistic. The good is rooted in the demands of singular sentient beings; the moral imperative develops from a concern to furnish the maximal satisfaction of these demands (Reck, 1967, pp. 80-81; internal quotation from James, 1891/1911, p.201).

James believed that sufficient conditions for ethical actions were guaranteed if the universe included sentient beings who made demands and then had to work out a system to resolve demand conflicts (see James, 1891/1911, pp. 190-215). Writers such as Reck (1967, pp. 80-81) and Brennan find this an important basis for James' pluralism, for as Brennan shows, James sometimes doubted the moral nature of the universe:

> Although James regarded the world thus as fundamentally moral, still a few texts can be found indicating that he seemed to view the universe as amoral or immoral: "To such a harlot [visible nature] we owe no allegiance; with her as a whole we can establish no moral communion; and we are free in our dealings with her several parts to obey or destroy, and follow no law but that of prudence in coming to terms with such of her particular features as will help us to our private ends." "Nature has no one distinguishable ultimate tendency with which it is possible to feel a sympathy." "If there be a divine Spirit of the universe, nature, such as we know her, cannot possibly be its ultimate word to man. Either there is no Spirit revealed in nature, or else it is inadequately revealed there..." "Nature is all plasticity and indifference--a moral multiverse...and not a moral universe" (Brennan, 1961, p. 35; internal quotations from James 1895/1911, pp. 43, 44, 52; and James, 1902/1923, p. 492).

Morality belongs to man alone. Furthermore, true morality consists in action: "We can come to know moral truths only by doing them; such truths cannot exist abstractly, that is, apart from some concrete consciousness, and they can be known only when they are actualized in concrete human experience" (Brennan, 1961, p. 15). This means that the "philosopher must avoid the 'superstition' of believing in a system of moral relations which are true in themselves" (Brennan, 1961, p. 16). Man cannot rely on any Absolute predetermined system; he is responsible for his own creations, and his rejection of ethical conduct leaves him equally responsible (see James, 1896/1911, pp. 4, 30-31).

The problem of how moral actions are to be decided upon is further compounded by the nature of the sensible world itself because moral actions take place in the world. James maintained that in the best of all possible worlds, all human demands would be met. Our world is not such a world however:

> But this world of ours is made on an entirely different pattern, and the casuistic question here is most tragically practical. The actually possible in this world is vastly narrower than all that is demanded; and there is always a pinch between the ideal and the actual which can only be got through by leaving part of the ideal behind. There is hardly a good which we can imagine except as competing for the possession of the same bit of space and time with some other imagined good. Every end of desire that presents itself appears exclusively of some other end of desire. ...So that the ethical philosopher's demand for the right scale of subordination in ideals is the fruit of an altogether practical need. Some part of the ideal must be butchered, and he needs to know which part. It is a tragic situation, and no mere speculative conundrum, with which he has to deal (James, 1891/1911, pp. 202-203).

The individual is continually called upon to make selections. In most cases, his conceptions about the world--gained through his interaction with sensible reality--will eventually suffice, and the decision will be made without effort. The ethical philosopher cannot,

however, rely upon his conceptions of the sensible world to guide him, because ethical decisions are by definition 'outside' mundane experience. James stressed that "The most characteristic and peculiarly moral judgments that a man is ever called on to make are in unprecedented cases and lonely emergencies, where no popular maxims can avail" (James, 1890, 2, p. 672). He never developed a social psychology and his failure to do so had important implications for his theory of ethics as the following quotation from Brennan's book illustrates:

> For James, the moral judgments which we are called upon to make on the basis of our own unique personal confrontation with moral problems are more characteristically and peculiarly moral judgments than those which are made for us by the community. This James believes even though he also admits the important contributions made by history and tradition in forming our standards of behavior. While he takes cognizance of the "layers" of human perfection which, for example, separate us from the Africans who pursued Stanley with cries of "meat, meat!" still he feels that the really significant moral judgments are not those that are "most invariably and emphatically impressed on us by public opinion" (Brennan, 1961, p. 136; internal quotations from James, 1890/1911, p. 258; and James, 1890, 2, p. 672).

The varieties of religious experience is perhaps the best source of James' views on what constitutes a true moral act. He concludes that it is the saint or the mystic who brings real change into the sensible world for he believes that:

> (1) Mystical states, when well developed, usually are, and have the right to be, absolutely authoritative over the individuals to whom they come.
> (2) No authority emanates from them which should make it a duty for those who stand outside of them to accept their revelations uncritically.
> (3) They break down the authority of the non-mystical or rationalistic consciousness, based upon the understanding and the senses alone. They show it to be only one kind of consciousness. They open out the possibility of other orders of truth, in which so far as anything in us vitally responds to them, we may freely continue to have faith (James, 1902/1923, pp. 422-423).

The supreme moral act consists of the transcendental changes that the mystic brings to the world. That mystical truths have no authority

beyond the individual's willingness to believe is unimportant for James. What signifies is that 'goodness' is potentially realized as the concrete outcome of faith. The means through which mystically derived 'beliefs' or 'truths' are translated into actions with concrete results basically follows the pattern set out above. Mental effort is necessary to hold the new 'truth' or idea in consciousness so that it can be translated into an idea with immediate implications for action. How these truths are actually translated into ideas with concrete meanings is largely the subject of James' pragmatism, and is discussed below in Chap. 7.

The role of the saint or mystic is to break down the rationalistic barriers of society by appealing to the 'latent' moral nature of man; in this way, the saint enlarges the horizons for truth. James' commitment to empiricism ensures that the events which come to be called good or evil must necessarily take place in the sensible world and are therefore given in perception. But the judgement that the events <u>are</u> good or evil is ethical and not perceptual. Nature is amoral within her own limits and the attribution of good or evil is a subjective addition to the sensible world. A moral framework is superimposed over concrete existents in the same way that scientific theories are imposed on natural phenomena. The function of the saint is to provide new truths to encourage the individual to make ethical evaluations and to seek confirmation of these truths in perception. If the 'goodness' that the saint brings is accepted--for the saint entirely overcomes evil in himself--then, James believes, the millenium may yet come. According to James, the saint comes closer to moral perfection than any other individual so that it is appropriate that he usher in the new order.

In the saint we find that James discovers the apex

> of moral perfection. In saintliness he finds the highest development so far realized in the moral evolution of the world, an evolution which is advanced by the co-operative efforts of God and good men (Brennan, 1961, p. 154; see also Brennan, 1961, pp. 10, 13).

That the saint is the ultimate harbinger of the millenium has interesting consequences. As James shows in the Varieties, the saintly type strains against the demands of the natural world in his struggle towards new truth (see James, 1902/1923, pp. 377, 297-309). There is a strong opposition between the demands of the 'inner' and 'outer' worlds. The saint, caught up in the pursuit of a higher truth, often abuses the needs of his body. In other words, he struggles against comfortable adjustment in the mundane world.

The function of the saint is to guarantee a new set of ideals. These ideals cannot be gleaned from everyday experience; they are arrived at through the process of turning one's back on mundane events and needs and concentrating attention on 'unearthly' concerns. In psychological terms, the saint ignores or overcomes 'instinctive' impulses and, with effort, gives his attention to ideas which are 'foreign to the instinctive history of the race'. James stresses throughout the Varieties that the course of the physical world (as man experiences it), is altered by the ideals of the saint and the truly religious man because these ideals change our subjective appreciation of reality (see James, 1902/1923, pp. 377, 427, 500, 517-524; see also Chap. 7). Mystical states:

> are excitements like the emotions of love and ambition, gifts to our spirit by means of which facts already objectively before us fall into a new expressiveness and make a new connection with our active life. They do not contradict these facts as such or deny anything that our senses have immediately seized (James, 1902/1923, p. 427).

James' insistence that the saint struggles to overcome his instinctive proclivities towards adjustment in the sensible world in favour

of concentrating on 'other earthly' problems makes it clear that he believes that the natural and moral worlds are opposed in the demands they make on the individual. In James' view the saint struggles away from those actions that the ordinary man affirms.[24] And in making each man potential saint and potential 'hedonist', James creates an internal conflict between the functions of volition (see James, 1902/1923, p. 377; see also James, 1890, 2, pp; 578-579). The dimensions of this functional dualism become clearer when James' personal reactions to the Utopian community at Chataqua are examined.

In his essay "What makes a life significant?" James recounts his attempts to discover what makes life morally significant. He studied various possibilities including self-sacrifice, 'working-class heroism', Fourrierism as developed in the settlement at Chataqua, Tolstoy's doctrines of toil, and intellectual idealism (see James, 1899/1949, p. 306). Ultimately, he rejected all of these in favour of a fusion of novel ideas with the will and endurance to practice them (see James, 1899/1949, p. 306). For he says that whatever material progress results through science and technology to ensure man's comfort and health, the crucial factor in making the world better depends upon the combination of novel ideas and will:

> Society has, with all this, undoubtedly got to pass toward some newer and better equilibrium, and the distribution of wealth has doubtless slowly got to change: such changes have always happened, and will happen to the end of time. But if, after all that I have said, any of you expect that they will make any genuine vital difference on a large scale, to the lives of our descendants, you will have missed the significance of my entire lecture. The solid meaning of life is always the same eternal thing--the marriage namely, of some

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24. James has reasonable grounds for asserting that this is what the saint does. The Varieties includes several detailed accounts of the lives of the saints and the deprivations they subjected themselves to in pursuit of higher truth (see James, 1902/1923, pp. 296-325).

> unhabitual ideal, however special, with some fidelity, courage and endurance; with some man's or woman's pains.--And, whatever or wherever life may be, there will always be the chance for that marriage to take place (James, 1899/1949, pp. 308-309).

Through new ideals and our recognition of their importance:

> There are compensations: and no outward changes of the condition in life can keep the nightingale of its eternal meaning from singing in all sorts of different men's hearts. That is the main thing to remember. If we could not only admit it with our lips, but really and truly believe it, how our convulsive insistencies, how our antipathies and dreads of each other, would soften down! If the poor and the rich could look at each other in this way, sub specie aeternitas, how gentle would grow their disputes! what tolerance and good humor, what willingness to live and let live, would come into the world (James, 1899/1949, p. 310).

The 'message' is compatible with the conclusions James later reached in the Varieties. But James' message has a more disturbing aspect when we examine the state of mind that produced it. James' reaction to his visit to Chataqua is important for the light it throws on his conception of morals and is thus worth quoting at some length:

> And yet what was my own astonishment, on emerging into the dark and wicked world again, to catch myself quite unexpectedly and involuntarily saying: "Ouf! what a relief! Now for something primordial and savage, even though it were as bad as an Armenian massacre, to set the balance straight again. This order is too tame, this culture too second-rate, this goodness too uninspiring. This human drama without a villain or a pang; this community so refined that ice-cream and soda-water is the utmost offering it can make to the brute animal in man; this city simmering in the tepid lakeside sun; this atrocious harmlessness of all things,--I cannot abide with them. Let me take my chances again in the big outside worldly wilderness with all its sins and sufferings. There are the heights and depths, the precipices and the steep ideals, the gleams of the awful and the infinite; and there is more hope and help a thousand times than in this dead level and quintessence of every mediocrity."
>
> Such was the sudden right-about-face performed for me by my lawless fancy! There had been spread before me the realization--on a small, sample scale of course--of all the ideals for which our civilization has been striving: security, intelligence, humanity, and order; and here was the instinctive hostile reaction, not of the natural man, but of a so-called cultivated man upon such a Utopia. There seemed thus to be a self-contradiction and paradox somewhere, which I, as a professor drawing a full salary, was in duty bound to unravel and explain, if I could (James, 1899/1949, pp. 289-290).

James realizes that his position is paradoxical and can only conclude that the need for conflict and struggle is a basic part of man's highest nature and that it is a positive and elevating part. What seems basically consistent in the labyrinth of James' ethical system is the need for some sort of permanent struggle in the life of man:

> So I meditated. And, first of all, I asked myself what the thing was that was so lacking in the Sabbatical city, and the lack of which kept one forever falling short of the higher sort of contentment. And I soon recognized that it was the element that gives to the wicked outer world all its moral style, expressiveness and picturesqueness,--the element of precipitiousness, so to call it, of strength and strenuousness, intensity and danger. What excites and interests the looker-on at life, what the romances and the statues celebrate and the grim civic monuments remind us of, is the everlasting battle ofthe powers of light with those of darkness; with heroism, reduced to its bare chance, yet ever and anon, snatching victory from the jaws of death. But in this unspeakable Chataqua there was no potentiality of death in sight anywhere, and no point of the compass visible from which danger might possibly appear. The ideal was so competely victorious already that no sign of any previous battle remained, the place just resting on its oars. But what our human emotions seem to require is the sight of struggles going on. The moment the fruits are being merely eaten, things become ignoble. Sweat and effort, human nature strained to its uttermost and on the rack, yet getting through alive, and then turning its back on its success to pursue another more rare and arduous still --this is the sort of thing the presence of which inspires us, and the reality of which it seems to be the function of all the higher forms of literature and fine art to bring home to us and suggest (James, 1899/1949, pp. 289-290; see also James, 1890, pp. 578-579).

This is James at his most romantic; Williams writes that:

> James...even while advancing the positivistic and instrumental diagnosis of the intellect, never relinquished the philosophical ambition...to become contemplatively a party to the ultimate nature of things. ...and yielded himself to a non-intellectual, immediate romantic vision of reality.[25]

Williams (1942, p. 113), and Perry (1935/1974, 2, p. 277) state that

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25. Williams, 1942, p. 113; see also pp. 120-121 where Williams charges that James' Romanticism was compatible with National Socialism.

James was influenced in his Romanticism by Nietzsche although Perry emphasizes that James could not accept Nietzsche's philosophy because he ultimately preferred peace to war. James developed his views in "The moral equivalent of war"; peace is not the moral equivalent of war, and the "martial virtues" which usually surface during wartime are to be enlisted in the struggle to subdue nature (see James, 1910/1949, pp. 324-326; see also Perry, 1935/1974, 2, pp. 278-279).

James was commited to the idea of heroic struggle:

> What is truly good, James says, is not the cooperative life with ease or the heroic life with war, but the cooperative life with heroism. Life is worth while if it is cooperative and heroic at the same time. So far as I can see, James simply sets these qualities up as ideals and asks if we do not accept them intuitively just as he does (Bixler, 1942, p. 66; see also Perry, 1935/1974, 2, pp. 271-279; Williams, 1942, p. 113; and Wild, 1969, pp. 280-281).

This streak of irrational romanticism is what makes James deplore the community at Chataqua. It is peaceful, cooperative, and stagnant; there is no heroism or struggle left in its inhabitants. The real function of mental effort is to keep the individual striving and struggling to realize new ideals; it is not to facilitate a comfortable, placid existence, whatever struggle was involved in the genesis of that existence.

This long digression into James' moral philosophy has been undertaken to clarify his intentions with regard to the function of volition with effort. Volition with effort (as a psychological construct) cannot be equated with the will to believe (as a philosophical construct) for reasons already cited. Psychologically, James cannot attach effort to a definable and restricted class of ideas without mitigating its fortuitous or adventitious significance. Thus, 'moral' in the psychological sense means that mental effort is exerted to hold an idea in consciousness until it stabilizes into a thought

with immediate action consequences. 'Moral' in James' philosophical sense means something quite different; it involves a rejection of the comforts of the mundane sensible world in favour of making unverifiable ideas into verifiable ideas--in other words, the 'moral' individual works to promote the ethical/metaphysical rationalization of the sensible world so that eventually, ethics will be able to take its place beside science because it will include a set of objects or sensible experiences which verify abstract hypotheses (see James, 1890, 2, pp. 569-579, 671).[26]

The intended psychological function of volition with effort becomes clear when the moral philosophy is examined: the real function of volition with effort is to change the world from what it is to what it should be. This is the explicit message of James' moral philosophy and the implicit meaning of his psychology. Volition with effort is not psychologically restricted to the will to believe, but it is there that it finds its legitimate function. When effort is applied to ideas which are already impulsive--from a psychogenetic perspective--no real change in the status quo is mediated. But when effort is applied to non-instinctive ideas, real changes take place in the mundane world so that rationalization can proceed and progress is assured. James is concerned with ethical evolution: he is not concerned with biological evolution and his commitments to Darwin and to Renouvier are merged in his translation of biological conceptions into postulates which describe ethical progress.

In the Principles, James describes the genesis of ethical

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26. In Chap. 4 we discussed the problems that emerge when the attempt is made to discover sensible correlates for abstract hypotheses in regard to the 'reality' of scientific objects. Some of the same difficulties are encountered in the attempt to discover sensible correlates for ethical hypotheses and these problems are discussed in Chap. 7.

postulates and the relationship between the back-door ideas and sensible experience. Front-door experience includes all of the processes which influence the mind by way of "simple habits and association" (James, 1890, 2, p. 628; see also pp. 626-627). The back-door ideas, on the other hand, are products of "indirect causes of mental modification" (James, 1890, 2, p. 627), and:

> Our higher aesthetic, moral and intellectual life seems to be made up of affections of this collateral and incidental sort, which have entered the mind by the back stairs...or rather have not entered the mind at all, but got surreptitiously born in the house. No one can successfully treat of psychogenesis, or the factors of mental evolution, without distinguishing between these two ways in which the mind is assailed (James, 1890, 2, p. 627).

Front-door psychogenesis is responsible for the development of habits, ideo-motor actions, and the sensible beliefs which correspond to these action patterns. Back-door psychogenesis is responsible for ethical and metaphysical ideas so that:

> The moral principles which our metal structure engenders are quite as little explicable in toto by habitual experiences having bred inner cohesions. Rightness is not mere usualness, wrongness not mere oddity, however numerous the facts which might be invoked to prove such identity (James, 1890, 2, p. 672).

James then goes on to say:

> No more than the higher musical sensibility can the higher moral sensibility be accounted for by the frequency with which outer relations have cohered. Take judgments of justice or equity, for example. Instinctively, one judges everything differently, according as it pertains to one's self or to some one else. Empirically one notices that everybody else does the same. But little by little there dawns in one the judgment "nothing can be right for me which would not be right for another similarly placed"; or "the fulfilment of my desires is intrinsically no more imperative than that of anyone else's"; or "what it is reasonable that another should do for me, it is also reasonable that I should do for him"; and forthwith the whole mass of the habitual get overturned. It gets seriously overturned only in a few fanatical heads. But its overturning is due to a back-door and not to a front-door process (James, 1890, 2, p. 673).

The relationship between the back-door ideas and the sensible

world is important here. When ethical ideas dominate consciousness, they do so in the sense of allowing the individual to recast his habitual perceptions into other forms. He does not simply regard events in terms of 'the movement of objects to and fro' and their sensible tactile effects on him; he begins to make judgements regarding the rightness or wrongness of what is taking place before him and then to make corresponding adjustments to his behaviour. To do so, he must overcome his habitual modes of responding and attend to the 'new' ideas which are making their appearance in his consciousness. This becomes clear in the tension James creates between habitual modes of responding and new or ethical modes in his moral philosophy. The function of the saint (as opposed to the ordinary man) is to 'seriously' overturn "the whole mass of the habitual" (James, 1890, 2, p. 673). The function of the saint in each man is to attend to ethical ideas when they arise so that ethical ideas can be realized and the ethical/metaphysical rationalization of the world can proceed.

Conclusion: The Will has Two Functions

We began with the hypothesis that James constructed a dualistic theory of volition--not because ideo-motor action and volition with effort necessarily conflicted with one another, but because there is a tension in consciousness between two antithetical sets of ideas. The two sets of ideas are distinguished psychogenetically; they are also distinguished according to whether or not they require mental effort to stabilize in consciousness. One set of ideas is therefore effectively realized at the expense of the other set, for the two sets of ideas have contradictory implications for behaviour. Furthermore, the 'strength' of the ideo-motor ideas is balanced by the adventitious possibility that effort will be aroused in conjunction

with the non-impulsive ideas, so that the tension between the two sets of ideas is maintained, not dissipated. Although James insisted that mental effort could be called upon to maintain any idea (instinctive or non-instinctive) in consciousness, he made it clear that in normal individuals, mental effort was only necessary to make non-instinctive motives prevail. Thus, the fortuitous arousal of effort does not act to bridge the contradictory sets of motives, nor does it act to elevate some of the instinctive tendencies into ethical postulates. Instead, the appearance of mental effort in conflicts between normally impulsive ideas indicates that the normal inhibition process has been disrupted with the result that the normal functioning of the will has been impaired.

In order to demonstrate that the will has two conflicting functions, we have examined James' theory of volition from several perspectives. The five types of decisions were reviewed in order to show that James believed that mental effort was only necessary (and in fact actually utilized), in the fifth type of decision-making (see James, 1890, 2, p. 535). Decisions made with effort were included along with ethical and metaphysical ideas to form the top level in the action hierarchy, and they were shown to be categorically distinguishable from the other levels of the hierarchy because they required effort for their implementation while the other modes of action did not. The relationship between volition with effort and the reflex paradigm was then reviewed, and it was established that once any idea stabilized in consciousness--with or without mental effort--it would atuomatically be discharged into physical movement. Furthermore, it was ascertained that the sensible results of any action--ethical or mundane--are given in afferent sensations. This has positive implications for James' realist epistemology because it means that the consequences of any action are

reflected back to the actor through his senses. It also means that James' theory of volition is structurally unified: any idea which stabilizes in consciousness will be released by the same reflex process, and the means of assessing the effects of the idea on the sensible world are identical in both types of volition.

Problems arise in considering the status of mental effort however: James insisted on defining mental effort as a purely adventitious force in consciousness. He made the separation between mental and muscular feelings of effort, and he then claimed that efferent arousal of the nervous system did not produce experienceable feelings in the individual All sensation was mediated through the afferent system so that the felt effects of holding any idea in consciousness consisted of the afferent sensations that were aroused when the idea was released reflexively into movement. Mental effort by definition preceded the reflexive discharge of the idea, so that it was neither an efferent nor an afferent sensation. Moreover, mental effort was not defined in terms of the impulsive or intentional quality of ideas, but existed as an independent mental force which was fortuitously aroused in conjunction with certain ideas in consciousness. It therefore existed as a mysterious fiat of the mind--mysterious because by definition it could not be quantified, nor was it linked with any of the other dynamic processes of the mind. James' theory of volition was therefore prevented from achieving a totally naturalistic or scientific status from the beginning.

Non-impulsive ideas were then examined and it was determined that 'non-impulsive' had two interrelated meanings: ideas were non-impulsive in the sense of being too weak to inhibit the quasi-automatic ideomotor actions, and/or they did not have immediate consequences for action and required translation as a part of the stabilization process.

Finally, non-impulsive ideas were shown to have different psychogenetic origins from ideo-motor ideas. An a priori distinction between the two categories of ideas and their corresponding requirements for mental effort was therefore established. But problems then arose because James indicates that impulsive ideas sometimes require mental effort before they can stabilize in consciousness. These cases initially seemed to contradict James' statement that mental effort is not utilized by normal individuals for the discharge of impulsive ideas. It was then demonstrated that the arousal of effort with ordinarily impulsive ideas was limited to so-called pathological conditions, or that it was confounded with the habitual action patterns which are demanded by social conditions. The use of mental effort in these latter conditions was shown to have more in common with the development of strenuous ideo-motor patterns and less with mental effort as a fortuitous force which holds an idea in consciousness. In the examples of both the mother and the woman-of-all-work, the stimuli for continuing to behave in a strenuous manner are given in perception and not through the arousal of an ethical or abstract idea in consciousness.

This interpretation of the relationship between mental effort and impulsive ideas is strengthened by James' rejection of the instincts as the foundations of ethical actions. He did not follow Spencer and Darwin in this regard, but took his psychological definition of moral action from the psychiatric treatises of the time. He therefore constructed a psychological theory of volition wherein effort could be attached to any idea in consciousness should the need arise, thus preserving the independent status of mental effort. At the same time, he also insisted in the Principles that the 'real' function of effort was to focus the attention on ethical/metaphysical ideas so that moral actions were equated with ethics. Thus, moral/ethical actions

were defined as those actions which utilize mental effort to stabilize non-impulsive conceptions with back-door psychogenetic origins.

The moral philosophy was then examined to determine whether James had in fact equipped the individual with two sets of conflicting functions corresponding to the two antithetical sets of ideas in consciousness. It was shown that James made a separation between the demands of the natural world of mundane adjustment and the demands of the worlds of freedom and that these demands conflicted with one another. Thus, man was equipped with two sets of functional responses which enabled him to satisfy some of the demands of both worlds. The cost was an irreconcilable conflict between motives. It was also shown that James considered this conflict of demands to be productive, for he romanticized and idealized the stress produced by the two conflicting sets of motives, and the concomitant struggle against Nature. The true function of effort was therefore to permit the individual to struggle against the biological demands for adjustment in the sensible world and to focus his energies on ethical ideals, to reinterpret his perceptions in light of these ideals, and finally, to make changes in the sensible world so that the metaphysical/ethical rationalization of the sensible world could proceed.

The function of volition with effort--and in this sense it corresponds to the will to believe--is not to provide a link between the two sets of ideas in consciousness, but to promote the metaphysical/ethical rationalization of the sensible world. Only when this rationalization has taken place so that sensible metaphysical/ethical objects have been discovered (analogous to the objects of science), and metaphysical/ethical postulates have been verified, can a link be forged between impulsive and non-impulsive ideas in consciousness, and the conflict between the two sets of tendencies reconciled. The

concretization of ethical ideas through mental effort works to begin this reconciliation.

James' rejection of the theory of innervation therefore had important consequences for his moral philosophy and his pragmatism. The afferent sensations that are experienced when any action is performed mediate the consequences of that action back to the actor. These afferent sensations thus constitute the verification of any idea in the sensible world. Once sensible objects have been discovered which correlate with ideas in consciousness, the will to believe is no longer necessary, and the ideas regarding the object take on an impulsive status. Until the ethical rationalization of the sensible world is substantially underway, however, the conflict between non-impulsive and impulsive ideas will continue, and the need for mental effort will remain.

It is important to emphasize that although the will has been shown to have two conflicting functions, the structure of the stream of consciousness is not impaired. If the non-impulsive ideas require effort to be discharged, it is not because they have no 'intentionality' but because they are inhibited by the stronger, quasi-automatic ideo-motor ideas, and/or because they have not been translated into ideas with ideo-motor consequences. Not all ideas can be potentially discharged--James makes it clear that a vast number of ideas have no immediate consequences for action (see Chaps. 3 and 4). Furthermore, the mysterious fiat of effort is not specifically attached to any given idea in consciousness. It arises fortuitously when the idea presents itself, so that structurally, non-impulsive and impulsive ideas are indistinguishable in terms of the parameters laid down in Chap. 3--all thoughts arise in consciousness as unitary, intentional objects, so that mental effort is an independent addition to any given

thought. Moreover, all ideas are discharged according to the rules of the reflex paradigm, and all knowledge of the consequences of any action is mediated through the afferent sensations. The tension produced in the stream of consciousness between the two sets of ideas is given in terms of the a priori conflict between ideas with different psychogenetic origins and the corresponding demands of the two 'worlds of experience'.

James' dissatisfaction with psychology as a vehicle for exploring metaphysical and ethical issues--particularly the problem of free will --has periodically been referred to. His conviction that he had gone as far as he could in developing an efficacious model of consciousness is reflected in the construction of the Principles. The chapter on the will is followed by a brief discussion of hypnotism which is in turn followed by the concluding chapter concerning the genesis of the necessary truths. This final chapter is particularly important, for it contains most of James' ideas on the evolution of scientific, metaphysical and ethical ideas. Furthermore, it is the most speculative chapter in the Principles: it is a theoretical analysis, couched in evolutionary terms, of how the mind is psychogenetically structured to know the world, and how the particular structures of the mind determine the ways in which the sensible world is rationalized. In contrast to the rest of the Principles, it contains virtually no empirical studies to support James' conclusions. It therefore forms a bridge between his attempt to construct a naturalistic, scientific psychology of consciousness and his move into philosophy. The theory of volition was James' last major strictly psychological theory.

We have shown that James constructed a theory of consciousness which is structurally unified but functionally divided, and we have attempted to delineate some of the factors which were responsible for

this construction. Thus, we have been arguing that the apparent inconsistencies in James' psychology are not idiosyncratic but are indicative of two distinct and opposing strands of thought. On the one hand, he was committed to evolutionary theory and to a naturalistic explanation of the mind's operations in relation to the world. He believed that man's behaviour was largely attributable to his physiological make-up and to his pre-determined instinctive reactions. His use of the reflex model places him firmly within the nineteenth century psychological tradition. But his commitment to Renouvier inspired him to search for some means of establishing that consciousness was in fact efficacious, and he therefore equipped the individual with a set of conflicting tendencies towards action and a mind that was by definition active and selective. If the reflex model was then utilized to account for the dynamics of how impulses were translated into movements, the a priori conflict between instinctive tendencies and the active, selective powers of consciousness acted to minimize the chances that the organism was reacting in a purely automatic fashion.

But the creation of a selective consciousness and the provision of conflicting tendencies did not guarantee that consciousness was truly efficacious. James was haunted by the idea that many ideo-motor and habitual reactions had the 'feeling' of being free actions when they were actually determined by inherited tendencies and the developmental phase reached by the organism when it first encountered the object. He therefore introduced the 'mysterious' fiat of effort into his psychology to ensure that the individual had a means of overcoming his habitual reaction patterns. But with the introduction of mental effort, James' psychology overstepped the boundaries between scientific empiricism and metaphysical speculation. By definition, mental effort

stands outside the range of quantifiable and analyzable psychological constructions, and James' insistence on the necessity for such a force in consciousness was largely responsible for preventing his psychology from gaining acceptance as a unified scientific account of consciousness.[27] His attempt to reconcile his two conflicting philosophical commitments--to scientific naturalism and to the freedom of the will--led to the development of the complex theories of belief and volition in the Principles. In the end, however, the two commitments are not reconciled, but are expressed in the functional duality that both major psychological theories exhibit. From a historical perspective, then, the two functions of consciousness, delineated here in terms of the theories of belief and volition, are important in understanding James' positive and negative influence on the development of post-evolutionary psychology.

Moreover, the problems which led James to construct a functionally dualistic view of consciousness in the Principles had important implications for the philosophication of evolutionary postulates. We have shown that James' nineteenth century 'progressive' view of science was partially responsible for his construction of a functionally dualistic model of consciousness. While James created a radical evolutionary structure for consciousness, the world that is known by the mind is given in terms of primary and secondary qualities and the mathematical, mechanical terms of Newtonian science. It was not until he left psychology for philosophy that James seriously and systematically began to work on a reassessment of the nature of the physical world as it is known by the mind. He did not have a new theory of physics or

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27. See Baldwin, 1891; Hall, 1891; Meyers, 1891; Peirce, 1891; Royce, 1891; Santayana, 1891; Sully, 1891; and Ladd, 1892; for the reactions of James' contemporaries to the Principles.

mathematics to offer and the status of science is therefore largely unchanged in his first philosophical writings. But he eventually developed new epistemological and metaphysical approaches to the study of the physical world, and these approaches both have their foundations in the psychology.

James was never satisfied with the mind-body dualism he adopted in the Principles. Necessary to his psychology, it became a major stumbling block in his attempt to create a realist epistemology and metaphysic. Thus he made various attempts to show that the dualism was largely artificial in the first place. But to do away with mind-body dualism, he found that he had to do away with the subject-object dualism which was a necessary condition for the unity of the stream of consciousness. Moreover, his reconstruction of the physical world required that he resolve the 'unstated' functional dualism of consciousness. Psychologically, the 'tension' that results from the dual functions of the faculties of belief and volition could be productive; it increased options and seemed to guarantee that the mind was active in making selections. The mind was forced to make selections and this seemed to guarantee that the mind was not simply an epiphenomenal over-flow of brain events. Philosophically the dualisms became increasingly problematic as James' philosophy took shape. The 'problems' of the preceding chapters--the subject-object dualism of the stream of consciousness in relation to the world, the dual functions of belief and volition and James' 'progressive' view of history, will therefore be re-examined in the light of James' philosophical theories.

CHAPTER 7

PRAGMATISM: AN EVOLUTIONARY EPISTEMOLOGY

> Mr. Peirce, after pointing out that our beliefs are really rules for action, said that, to develop a thought's meaning, we need only determine what conduct it is fitted to produce: that conduct is for us its sole significance. ...To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve--what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object, so far as that conception has positive significance at all.
>
> This is the principle of Peirce, the principle of pragmatism. It lay entirely unnoticed by any one for twenty years, until I, in an address before Professor Howison's philosophical union at the university of California, brought it forward again and made a special application of it to religion (James, 1907/1913, pp. 46-47).

The Genesis of Pragmatism: Darwin and the Metaphysical Club[1]

Perry writes that "the influence of Darwin (on James) was both early and profound, and its effects crop up in diverse and unexpected quarters" (Perry, 1935/1974, 1, p. 469). That Darwin's theory had a profound and lasting influence upon James' philosophical career shows clearly in his major epistemological theory, pragmatism. This chapter will concentrate on pragmatism as an evolutionary epistemology, while taking into account the other major influences on its development as well. Whether a satisfactorily comprehensive epistemology can be derived from biological evolutionary premises is still a matter of debate among contemporary psychologists.[2] It is hoped that this account of James' pragmatism will lead, not only to a greater understanding of his philosophy per se, but to the realization that the problems he faced in attempting to construct an evolutionary epistemology may still be relevant to contemporary issues in philosophy and psychology.

James recognized that epistemology was basic to psychology. When Ward criticized the Principles because it expressed a fundamental dualism between psychology and metaphysics (see Ward, 1892, pp. 531-539), James replied: "There can be no psychology worth the paper it is written

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1. It should be noted that this chapter does not attempt to give an exhaustive examination of James' pragmatism. It should also be noted that the discussion of perception and conception (based on James' pragmatic writings) is given in the last section of Chap. 3. This discussion was given in the earlier part of the thesis because it amplifies the discussion on the construction of the stream of consciousness and the problems James faced in coming to terms with the problem of the 'knower' and the 'known'.

2. See for example, Campbell, 1974. Campbell provides an appendix (pp. 460-463), which lists works recently published on this problem.

on (except the science of the correlation of brain states with objects known) until something sound in epistemology is done. Pray go ahead and do it" (James, quoted in Wiener, 1965, p. 108). James took up his own challenge: the result was his particular version of pragmatism. James first formally proposed pragmatism as a specific theory for dealing with metaphysical issues in 1898,[3] in a lecture entitled "Philosophical conceptions and practical results", although anticipations of the theory are found in the Principles, and in The will to believe. James gave Charles Peirce credit for the invention of the theory in 1878, but Peirce vehemently replied that although pragmatism was indeed his philosophical offspring, James' version contained many major and serious incompatibilities with his own theory (see Thayer, 1968, pp. 135-141).

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3. See James, 1907/1913, p. 45, where James again states that "The pragmatic method is primarily a method of settling metaphysical disputes that otherwise might be interminable." The distinction between metaphysics and epistemology appears to be confused in this passage, and Baldwin makes it clear in his definitions of metaphysics and epistemology that these two major branches of philosophy "collide" to a large extent (see Baldwin, 1901/1960, 2, p. 73). Metaphysics can be broadly conceived as "the systematic interpretation of experience and the explication of all its implicates" (Baldwin, 1901/1960, 2, p. 73), while epistemology becomes the study of the origin of knowledge, the validity and limits of knowledge, and finally, the study of the nature of the objects of knowledge (see Baldwin, 1901/1960, 1, p. 335). Baldwin states that "The two inquiries are, however, so closely allied that it is impossible to carry on either independently. ...Some, accordingly, have refused to make any distinction between the two" (Baldwin, 1901/1960, 1, p. 336). Baldwin concludes that epistemology cannot give all that is required in metaphysics or ontology so that the distinction is retained although in practice many theorists fail to make the separation. Baldwin's analysis was selected as a reflection of the difficulties encountered in James' time. It was therefore decided to treat pragmatism as James' epistemology and radical empiricism as his metaphysic for reasons that will emerge more clearly in this, and the following chapter. James himself does not make this distinction between the two branches of his philosophy so that the distinction is somewhat arbitrary. However, broadly speaking, pragmatism appears to have more in common with epistemology than with metaphysics, for it was developed as a methodology for answering metaphysical questions, and as such conforms to Baldwin's definition of an epistemology. Radical empiricism thus emerges as the 'result' of employing the pragmatic method, so that James believes that he can make ontological statements about the nature of mind, body, and the physical world of experience within radical empiricism.

A comparison of the two versions of pragmatism indeed gives credence to Peirce's rejection of James' theory.[4]

Morris writes that pragmatism is unique in philosophy because it is based on the premise that "the nature of meaning can be clarified only by reference to action" (Morris, 1970, p. 16). Thus pragmatism is a methodology for discovering meaning, and the meaning as much as the truth or falsity of a proposition can be determined only through an active process of verification. As Wiener writes, "The meaning of an idea grows out of the particular effects we perceive when we act on it; truth is what happens to ideas when they fit our experiences dynamically, that is, when the flux of experience becomes adapted to variations produced by our individual efforts" (Wiener, 1965, p. 102).

The time was ripe for the development of pragmatism and Morris cites the conditions which led to this unique theory of knowledge as:

> 1) the prestige which science and the scientific method enjoyed in the mid-nineteenth century; 2) the corresponding strength of empiricism in the then current philosophy; 3) the acceptance of biological evolution; 4) the acceptance of the ideals of American democracy (Morris, 1970, p. 5).[5]

These four conditions provided the basic framework for the type of philosophizing engaged in by the members of the famous 'Metaphysical Club'[6], as Peirce named it, and the seeds of James' pragmatism were

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4. For an excellent discussion of the differences between Peirce and James, see Thayer, 1968, pp. 135-151.

5. Morris claims that the early pragmatists accepted these four conditions as unproblematic (see Morris, 1970, p. 4). Morris then attempts to relate these four conditions to one another in an "unproblematic" model to show that they provided an explicit and unified foundation for pragmatism. This is somewhat misleading because the specific contents of the conditions and the relationships between them proved to be extremely 'problematic', as will be shown in the following pages. At this point however, it is convenient to accept these 'conditions' at their face value as the necessary conditions for pragmatism.

6. Kuklick gives a good description of the membership of the Metaphysical Club and the topics discussed. The evolutionary origins of (contd.)

sown in these early discussions. Charles S. Peirce was the first to specifically propose pragmatism as a theory in his 1878 paper, "How to make our ideas clear". Peirce's ideas were largely ignored by philosophers outside the Harvard circle, and historically, Peirce must be studied for his effect on the philosophy of the more popular James, for it was not until the 1930's that a renewed interest in the origins of American philosophy placed Peirce in the ranks of philosophic innovators as a thinker of importance in his own right.[7] By the time James published his own theory of pragmatism, he had gained the self-confidence which allowed him to break away from Peirce's influence so that he was now able to develop a theory of pragmatism suited to his own scientific and metaphysical concerns.

But if James broke away from the specific doctrines of Peirce, his pragmatism was still largely a product of the conditions that gave the discussions of the 'Metaphysical Club' their particular flavour, as in fact these same conditions determined the wider scientific and philosophic viewpoint of the late nineteenth century. Faith in the scientific method was strong; the achievements of science in the nineteenth century were impressive and the successes in biology, geology, and astronomy, aligned with the feeling that Newtonian physics had ultimately succeeded in providing a mechanical basis for understanding the universe, led to an optimistic attitude that correct application of the scientific method would result in a unified theory of all aspects

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6. (contd.) pragmatism are documented by Kuklick and he describes its first appearances in the writings of Holmes, Wright, Peirce, and James (see Kuklick, 1977, pp. 47-54).

7. Kuklick calls Peirce "the most powerful modern American thinker" (Kuklick, 1977, p. 104). On pp. 123-126, Kuklick documents Peirce's failure after 1884 to secure an academic position, and his obscure death in 1914. Peirce's works were first published in collected form in 1931-1938, many articles thus appearing in print for the first time (see Kuklick, 1977, pp. 644-645 for a short report on the present status of Peirce scholarship).

of experience (see Mackenzie, 1976, pp. 331-334). Correspondingly, the notion that:

> "pure reason" alone could delineate the ultimate nature of the universe had been called into question by the work of David Hume and Immanuel Kant. The result of their analysis strengthened the prestige of empiricism in philosophy: empiricism is the view that all reasoning about the world should take off from and be in turn checked by "experience"--by what could be "observed" (Morris, 1970, p. 7).

Empiricism and faith in the scientific method were natural counterparts. James' pragmatism sprang from the nineteenth century assumption that scientific methodology provided the means of validating particular conceptions, and he found the philosophical support he required in the empiricist philosophy of Locke, Hume, and J.S. Mill.[8] The acceptance of American democracy is put forth by Morris as integral to the development of pragmatism and certainly thinkers such as Dewey and Mead made use of the concept in their social theories (see Morris, 1970, p. 8). James, however, while always an enthusiast regarding the 'American way of life', never developed the 'social' or 'society-determinative' aspects of knowledge in his epistemology, so that 'Americanism' acted only as a secondary, or inspirational influence upon the concrete development of his pragmatism.

If the rising status of scientific method and the influence of traditional empiricism were necessary components of a suitable climate for the development of pragmatism, the acceptance of evolutionary theory, as it was proposed by Darwin in particular, was the critical factor in its birth. Morris writes:

> The major pragmatists all accepted the view that man emerged as one kind of living being within a long evolutionary process.

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8. This contrasts with Peirce's emphasis upon Kant. Peirce took the term 'pragmatism' from Kant (see Thayer, 1968, p. 139), while James writes: "the term is derived from the same Greek word πραγμα, meaning action, from which our words 'practice' and 'practical' come" (James, quoted in Thayer, 1968, p. 139).

> Pragmatism is unmistakably a post-Darwinian philosophy. Its empiricism is a biologically oriented empiricism: "experience" itself progressively comes to be interpreted as involving a living organism and its world (Morris, 1970, pp. 7-8).

Morris correctly concentrates upon biological experience as the heart of pragmatism. For James, human experience as such is central precisely because he accepted evolutionary theory. Moreover, if evolutionary theory brought with it an explicit emphasis on experience, it also carried cosmological implications, and the pragmatists were the first group of philosophers to make these explicit.

Wiener points out that Darwinism did not hold the answers to James' metaphysical problems (see Wiener, 1965, pp. 98-99). Instead, pragmatism was developed as a methodology for resolving metaphysical disputes that otherwise would not admit of solution. The proposal that pragmatism is an evolutionary epistemology means that pragmatism took its structure or its terms of argument from evolutionary theory, so that metaphysical disputes were to be resolved within the context of the new cosmology that grew out of certain selected and transformed premises of evolutionary theory. Evolutionary theory concentrated on change, variation, and growth, and these concepts are central to James' pragmatism.

Pragmatism did not result from a direct translation of Darwinian biology into philosophical terminology. Certain evolutionary postulates were selected at the expense of others, and then transformed so that they took on new meanings and implications. We have already seen that James was not interested in the concept of the survival of the fittest, and therefore did not develop the idea in his psychology or philosophy. On the other hand, he found the concept of spontaneous variation extremely fruitful and he adapted it to serve as the psychogenetic basis for his theory of ethics. The relationship between

Darwinian biology and pragmatism is complex: the implications that Darwinian biology carried in its wake for the construction of a new cosmology can only appear obvious from the position of historical hindsight. The early pragmatists had the task of trying to determine exactly what the epistemological and metaphysical implications of evolutionary theory were. They also had to find a means of reconciling evolutionary concepts with the demands of their other philosophical commitments. It is perhaps worth recalling at this point that Darwin himself was intent on preserving the uniformity of nature, and he used every means at his disposal to try to ensure that his biological theory was compatible with the mechanical world-view of the Newtonian era. How the concepts were selected by the pragmatists, and how they were transformed into a new epistemology, is therefore discussed below.

In the following statement, Wiener sums up the effects Darwinian biology had on James' pragmatism and indicates how the selective transformation of biological concepts into philosophical concepts was achieved by James:

> James adhered closely to the observational evidence supporting Darwin's hypothesis, as Chauncey Wright did, for both were critical of the dogmatic claims of those who tended to make a gospel of evolutionism (Spencer, Fiske, Abbot, and Peirce). But the variety and complexity of nature which Wright called "cosmic weather" and Peirce "tychism", became for James the metaphysical ground of the theory of an open universe and individual moral freedom. What James as a metaphysician finally retained of evolution, namely, the ideas of temporalism and spontaneous variation, served him persistently in his defense of the primary importance of individual experience and personal freedom. That is the Ariadne's thread to James's philosophy of evolution. The elusive but genuine character of individual spontaneity in both the external world and in man is in James's view of evolution epitomized by "saltatory" mutations, original, spontaenous, irreducible phases of experience. James in his metaphysics dramatized the external world of sensations and the inner world of rational, moral, aesthetic, and religious sentiments. Take these spontaneous variations and creative impulses as you find them, and you have the ingredients of James's faith in the sufficiency of immediate experience, despite its transiency, and in the will to believe, despite the chilling, paralyzing doubts of scientific skepticism. Scientific and philosophical ideas become merely abstractions, useful only as intellectual

> instruments or convenient fictions to aid the individual to find his way among the complex particulars that flow into and out of his stream of experiences. The arrogance of metaphysical evolutionism is due to its attempts to substitute scientific abstractions for the more deeply felt flux (Wiener, 1965, p. 101; see also p. 265).

The heart of James' pragmatism lies in its emphasis upon human experience. But if James found sufficient support for centering his philosophy on individual human experience in Darwin's writings, his interpretation of Darwin was coloured by his reading of Renouvier, and his contemporaries were critical. Wright, Holmes, and Peirce "early and severely criticized James' doctrine of the will to believe for putting man too close to the centre of the evolving universe"(Wiener, 1965, p. 100). And in 1907, Holmes, on reading James' articles, "Pragmatism's conception of truth" and "A defense of pragmatism" wrote to James:

> For a good number of years I have had a formula for truth which seems humbler than those you give ... but I don't know whether it is pragmatic or not. I have been in the habit of saying that all that I mean by truth is what I can't help thinking. The assumption of the validity of the thinking process seems to mean no more than that: I am up against it--I have gone as far as I can go--just as when I like a glass of beer. But I have learned to surmise that my <u>can't helps</u> are not necessarily cosmic can't helps--that the universe may not be subject to my limitations; and philosophy generally seems to me to sin through arrogance. It is like the old knight-errants who proposed to knock your head off if you didn't admit that their girl was not only a nice girl but the most beautiful and best of all possible girls. I can't help preferring champagne to ditch water,--I doubt if the universe does (Holmes, quoted in Perry, 1935/1974, 2, p. 459).

The particular concepts that James extracted from Renouvier, from the writings of the British empiricists, and from Darwin compelled James the <u>psychologist</u> to emphasize man's central role as knower and interpreter of the universe. From British empiricism, "he was quick to note Locke's recognition of the practical motives in knowledge" (Perry, 1935/1974, 2, pp. 449-450). The influence of Renouvier is obvious: if a proposition falls outside the ordinary empirical verifi-

cation process, then belief not only may be, but should be assumed, in accordance with religious and moral sentiments. Dilemmas which require the will to believe for resolution are, by definition, individual dilemmas (see James, 1890, 2, p. 672). James' contention that individual preferences did matter, that the universe was a culmination of the experiences of its inhabitants, and that those experiences were in part determined by individual interests and preferences, was a logical outcome of his selective readings of Renouvier, the British empiricists, and Darwin. For James, the extension of evolutionary doctrine into psychology and philosophy implied that the concepts of temporalism, mutability, and adaptability must be applied to the understanding of human knowledge itself.

The emphasis on the particulars of experience in James' pragmatism is inextricably linked with his psychological structure of consciousness. James' insistence that feelings exist for the sake of instigating action is central to his pragmatism because it is only through active experience that feelings can be connected to external objects: feelings themselves are not initially cognitive of particulars. Feelings, like objects, are not 'true' or 'false'--they simply exist. Truth becomes a property of particular thoughts or feelings when they are verified in the world and the problem of how percepts are related to concepts thus occupies a substantial portion of James' pragmatic writings.[9]

We have already seen that James maintained a largely Newtonian structure for the physical world in the Principles--the 'progressive'

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9. See Chap. 2, pp. 196-214, for a discussion of the relationship between percepts and concepts and James' difficulties in defining that relationship. See also Perry, 1935/1974, 2, pp. 454-455; and Ayer, 1968, pp. 293-294.

view of history largely dominates the 'relativistic' strand in that work, while the evolutionary influences on James' thought are developed in his construction of consciousness. This pattern is partly repeated in the pragmatism, particularly in regard to the status of the necessary truths and their relation to science, as will be shown below. Evolutionary ideas are applied to the problem of how consciousness knows the world. Thus James was to argue that the meaning of an idea could only be developed after the idea had resulted in physical movement because only then does the individual experience the effects of the idea on himself and on the physical world. The advent of evolutionary theory made it impossible for the early pragmatists to hold that there were permanent possibilities of sensation. If the physical world really is temporal and mutable, then the afferent sensations that are produced when an idea discharges into physical movement are unpredictable on an a priori basis at least. James was not concerned with constructing a new physical theory to describe or explain sensible experiences; he was concerned with developing an epistemology that would explore the meanings of truth through the processes of verification. His commitment to an efficacious model of consciousness led him to postulate that the active interaction between the mind and the physical world would produce new experiences so that potential changes are possible in both ontological spheres. In James' view, the temporal and mutable status of the physical world depended at least in part on the sentient minds that knew it.

Wiener writes that the two aspects of evolutionary theory: "1) the conception of random and therefore of spontaneous 'chance' variations; 2) the conception of the action of the environmental conditions in selecting those variations having survival value and vigorously

eliminating all others" (Wiener, 1965, p. 103), had diverse effects upon James' thinking. While James transformed the first principle of evolutionary theory into the foundation of his psychogenetic model, much of his philosophy militates against the second premise of evolutionary theory:

> there are for him originally chance variations which have no positive survival value, but nevertheless survive; there are even some which are in some degree (though not to a decisive degree) unfavorable to survival. And in man these, so to say, completely non-Darwinian values are for James the supreme values--the truly "valuable" things (Wiener, 1965, p. 104).

Wiener errs here only in his under-estimation of the polarity James created between chance ideas of ethical actions and ordinary adjustment tendencies. Because man has the potential 'born in the house' to sacrifice his personal safety in attempts to implement his novel ideas (see James, 1890, 2, pp. 627, 672), the world is not free to evolve according to a strict biological model. James' selection of the first aspect of evolutionary theory and his rejection of the second also serves as an important demonstration that the philosophication of evolutionary theory did not involve a parallel translation of biological principles into epistemological and metaphysical postulates.

Campbell criticizes the early pragmatists for not extending the biological model of natural selection far enough in their development of a selective view of mind (see Campbell, 1974, pp. 429-430). That Campbell, despite his strong desire to do so, is as yet unable to construct a satisfactory realist epistemology, based on a biological natural selection model, which would be applicable to current problems within the philosophy of science, is perhaps evidence for the difficulty of such a task. And if the other members of the Metaphysical Club criticized James for over-emphasizing human experience and metaphysics, Campbell reminds us that they too, had their doubts about Darwinian

theory as an adequate vehicle for the development of pragmatism. Peirce, for example, gave equal weight to the theories of Lamarck and Agassiz and doubted that Darwinian theory was or could be, 'proveable' (see Campbell, 1974, p. 439; see also Wiener, 1965, pp. 73-79).

The early pragmatists did not agree on the adequacy of Darwinian theory as the foundation for the new philosophy; moreover, they were divided in their commitments to the various models of empiricism available. James and Wright based their pragmatic theories on British empiricism while Peirce followed the popular neo-Kantian movement. Furthermore, James' commitment to British empiricism was confounded by the particular neo-Kantian influence of Renouvier and this set him apart from the other members of the group. The members of the Metaphysical Club were not, therefore, united in either their selection of evolutionary postulates, in their selection of empiricist theories, or in the links they forged between them (see Wiener, 1965, pp. 71, 76). Wright argued that Darwin's theory vindicated J.S. Mill's logical system (see Wiener, 1965, p. 72), while Peirce believed that the eventual effect of Darwinian evolution would be "to destroy the mechanical associationism of Mill's mental chemistry" (Wiener, 1965, p. 72). Peirce's own contributions to logic and the philosophy of science were closely "related to the impact of evolutionism" (Wiener, 1965, p. 80).[10] The broad 'uniting' effect of evolutionary theory on the members of the Metaphysical Club was in providing the incentive to change the 'status' of philosophical theories so that "in the tradition of pragmatism, the

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10. Wiener gives a detailed account of the differences between the early pragmatists regarding their selections of evolutionary postulates, their other philosophical commitments, and their individual aims in uniting empiricism and evolutionary theory. His Book, Evolution and the founders of pragmatism, is the most thorough study to date on the relationship between evolutionary theory and the birth of pragmatism.

categories [of knowledge] were seen as but pragmatically useful ways of thinking, usually products of cultural history rather than biological evolution" (Campbell, 1974, p. 444).

Thus the intention of the pragmatists was not to develop an epistemology based solely on biological evolution, but to reinterpret traditional philosophy according to the new perspective. Evolutionary theory provided the foundation for a new set of philosophical postulates; at the same time, it was equally influential in stimulating new lines of reasoning--new ways of asking old questions--as James explained when he called his book Pragmatism: A new name for some old ways of thinking.[11] James thus believed that pragmatism was a 'coming together' of trends which had long existed as isolated portions of traditional philosophical systems. Darwinian theory provided the catalyst which drew these 'old ways of thinking' together.

The 'Problematic' Conditions of Pragmatism

So far, it has been argued that James' pragmatism had its roots in evolutionary theory and that evolutionary postulates were in turn applied to traditional empiricist philosophy which then took on new meanings for the members of the Metaphysical Club. Thus Morris concluded that evolution, empiricism, faith in the scientific method, and American democracy were the 'unproblematic' conditions for the birth of pragmatism. The acceptance of these four conditions by the early pragmatists accounts for the similarities in their works; the differences between them can likewise be explained by their particular selections within the given range of theories, coupled with an understanding of

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11. See James, 1907/1913, p. vii. It is perhaps significant that James dedicated Pragmatism to the memory of John Stuart Mill.

the individual goals they pursued in building their philosophical systems. An understanding of these 'unproblematic' features thus makes pragmatism intelligible (see Morris, 1970, p. 5). And up until now, this analysis has more or less agreed with Morris in treating these conditions as 'unproblematic'. However, doing so is misleading in a philosophical sense, if not in Morris's 'historical' sense. For while it might be 'unproblematic' that these four conditions were basic to the emergence of pragmatism, the conditions themselves--the theories and convictions--were problematic indeed; and the conjunction of empiricism and Darwinism was especially so.

Thayer, unlike Morris, writes that the origins of pragmatism are "cloudy" (Thayer, 1968, p. 5). He shows, in a historical/philosophical analysis of the rationalist-empiricist tradition, that the empiricist position was and always had been, highly problematic. Morris makes no mention of the influence of rationalism on the development of pragmatism; he links Kant with Hume in a not altogether convincing attempt to show that the early pragmatists were all committed empiricists (see Morris, 1970, p. 7, quoted above, p. 466). That James continually struggled to free his epistemology of rationalist implications and that he was not always successful in this endeavour provides partial evidence against Morris's assertion that the early pragmatist commitment to empiricism was unproblematic. The point is that the differences between rationalism and empiricism had not been satisfactorily resolved by earlier empiricist philosophers so that the same problems that confronted the British empiricists returned again to trouble James in his efforts to build an epistemology and metaphysic on the basis of sensory experience. Because the conflict between rationalism and empiricism was to prove so important in James'

philosophy, it is worth briefly summarizing Thayer's analysis.

Thayer reminds us that rationalism and empiricism had grave difficulties in arriving at a fundamental basis for human knowledge--the empiricists deriving their framework from feeling and sensation; the rationalists, from reason (see Thayer, 1968, p. 37). These problems date from the time of the scientific revolution, when the primary and secondary qualities doctrine, so successful in physics, led to severe epistemological problems for the philosophers of mind so that Thayer writes that Locke failed:

> to explain how we could know that some of our ideas do resemble "external" objects, [and] we are left, in Locke's theory with the uninvited conclusion that all we do know or can know is our own ideas. The understanding remains closed in its own private room and cut off from the world. Generally, if the seventeenth-century world picture was true, it could not possibly be known to be true (Thayer, 1968, p. 24).

Furthermore, "Both Locke and Newton...are left affirming the existence of a world and of knowing minds but with no intelligible connection discoverable between them" (Thayer, 1968, p. 24). For Newton, sense experience had to account for the origin of science and mathematics, but the basic concepts of science and mathematics could be neither experienced by, nor derived from sensory observation. As Thayer goes on to say:

> It is interesting to see both Newton and Locke turn the very coinage of empiricism into possible counterfeit by declaring, in almost identical phrasing, that we can never know the nature of substance or what things "really" are. At best we can but know things by their properties and effects. Substances remain inaccessible, objective unknowns. It is attributes and experienced effects that constitute the ephemeral stuff of our tantalized reckonings with and probings into nature (Thayer, 1968, p. 25).

Berkeley, Hume, and Kant, in their several ways, attempted to bridge the epistemological gap between Newtonian principles and sensible knowledge so that Berkeley and Kant attempted "a reconstruction of philosophic theories of experience and knowledge" (Thayer, 1968,

p.25). Hume, conversely, made a separation between science, metaphysics, and experience so that he 'ironically but effectively' destroyed the older rationalism and in conjunction with Kant, left the way clear for the development of irrationalism and romanticism (see Thayer, 1968, p. 26). Furthermore, all of these changes took place under one dominating assumption and that assumption was that Newtonian principles provided an Absolute framework for the workings of the universe. Thus philosophy was essentially left with a situation where:

> The subjectivity characteristic of modern philosophy derived its impetus from an intolerant Galilean cosmology...which drove mind and knowing out of nature, and from Locke's problem, which unintentionally left the knowing mind with nothing but itself for a subject matter (Thayer, 1968, p. 27).

The end result of the rationalist-empiricist endeavour was a static, elementaristic, contemplative view of the universe, at least regarding man's role in it. Finally, rationalism had changed its colours but it had not disappeared.

The growth of Romanticism effected a shift in emphasis from the mechanistic view of the Enlightenment towards a more evolutionary notion of progress (see Marcell, 1974, p. 73). The Romantic emphasis on feeling and emotion as modes of true understanding made their impact on pragmatist thinkers and this 'impact' must be taken into account in assessing James' search for a teleological basis for cognition. While he looked to Locke, not Kant, his search was still coloured by the Romantic movement.

Adopting an empiricist position was in itself problematic; the demands or problems presented by rationalism could not be ignored and the Romantic movement coloured the perspective of the would-be empiricists. Furthermore, the combination of evolutionary theory and traditional empiricism soon proved to be problematic. Evolutionary theory appeared at first to provide the necessary link between

physics and biology; it was greeted as a means of demonstrating lawful continuity and progress in the biological world, compatible with physical mechanics. As Greene states "There was no room for genuine chance in Darwin's view of nature. Everything, he asserted repeatedly, was the result of fixed laws" (Greene, 1959, p. 304). Darwin was intent on preserving and extending the uniformity of nature (see Darwin, 1859/1977, pp. 455-460), and when he dealt with psychological issues he spoke as an associationist. The assumption of the early pragmatists (notably Wright, and at times James), that evolutionary theory and empiricism were compatible doctrines was therefore not unfounded. But Darwin's work had another strand 'submerged' beneath the mechanistic paradigm he wished to ratify. He, like the rest of his contemparies, incorporated a strong anthropomorphism in his writings (see Young, 1971, pp. 461-467). He attempted to counter the suggestion (made in the first edition of the Origin) that the selective process was sometimes voluntaristic (see Young, 1971, p. 465), by stating in the third edition of the Origin, that he meant "by Nature, only the aggregate action and product of many laws, and by laws the sequence of events as ascertained by us" (Darwin, 1872, p. 59; quoted in Young, 1971, p. 466). Darwin's work is overtly connected with the mechanistic science of the nineteenth century and his manifest efforts to ensure that his theory of evolution was compatible with the science and psychology of his time were probably effective in convincing the pragmatists that evolution and empiricism were compatible. But the 'latent' strand of voluntarism had profound consequences for the philosophication of evolutionary theory.

While James railed against the anthropomorphism in the psychology of the empiricists, his objections were in fact to the use of anthropomorphic analogies of force as the means of 'explaining' mental events

in a mechanistic, materialistic paradigm of science (see James, 1880/1920, pp. 207-219). And it is perhaps relevant that he did not object to the 'anthropomorphism' in Darwin's work. Instead, the early pragmatists took from Darwin's work precisely those implications which he himself tried so hard to suppress in the name of natural law. Greene writes:

> Oddly enough, it was precisely the element of chance variation, taking chance not simply as the reverse aspect of law but as its genuine opposite, which appealed to the American pragmatists Charles Peirce and William James as a means of deliverance from the mechanical determinism of nineteenth-century physics and chemistry (Greene,1959, p. 305).

Greene then goes on to say that:

> William James, Henri Bergson, A.N. Whitehead and others,... found in the idea of organic evolution the key to a new philosophy of nature in which spontaneity, novelty, creativity, and purpose had a place--a place denied them earlier in the mechanical cosmology inherited from the seventeenth century (Greene, 1959, p. 306).

The connection between empiricism and evolutionary theory that Darwin tried to ensure was quickly broken down by the pragmatists in their attempt to create a philosophy of nature based on precisely those conceptions that Darwin himself recognized as incompatible with empiricism and formal science. The principles that were extracted from evolutionary theory by the early pragmatists were not compatible with many of the traditional empiricist concepts of mind and its relation to the world, so that the birth of pragmatism depended on the reevaluation and reconstruction of empiricist principles.

Faith in the scientific method accelerated with the acceptance of evolutionary theory, but its role in the construction of pragmatism is problematic in much the same way as the role of traditional empiricism. Marcell writes:

> Although science was celebrated on many fronts as the agent of progress, there were those who recognized that the scientific method itself was corrosive of the comfortable absolutes that

> had defined the moral and physical universe for centuries. The very function of science, until those turbulent decades after Darwin, had been to confirm and verify the regularity and harmony of the cosmos. By the turn of the century, many Americans were coming to share the unsettling conviction that advances in science, exhilarating as they were, lay directly behind the growing sense of uncertainty and alienation that was beginning to affect the popular consciousness. While the noted historian John Fiske, in surveying the "century's progress in science" in 1896, could serenely conclude that the "dynamical conception" of the world achieved by Darwin and Spencer revealed man to be "the child of the universe, the heir of all the ages, in whose making and perfecting is to be found the consummation of God's creative work", others found in evolutionary science not guaranteed progress but flux, indeterminacy, and, in Charles S. Peirce's phrase a "universe of chance". While his contemporaries were linking and even identifying science and progress, Peirce was specifically denying that happiness or social improvement had anything to do with science. That which related to improvement, Peirce argued, was not science but some other valuative process (Marcell, 1974, pp. 34-35).

The pragmatists began with the same optimism in scientific methodology as a means for developing a comprehensive view of 'physical' and 'experiential' reality that was sweeping the scientific and philosophical world. But they soon discovered that the scientific method as it was constituted, with the defined aim of describing a regular, mechanical universe was not capable of dealing with the moral and metaphysical problems evolutionary theory left in its wake. Peirce began his quest for a new theory of meaning (see Thayer, 1968, pp. 120-132), and James ultimately narrowed the efficacious range of science in his philosophy while emphasizing the will to believe as a means of deciding between unverifiable options and stressing the cosmic importance of such decisions.

The final condition Morris cites is the acceptance of American democracy. This condition as it applies to James is probably the most 'unproblematical' of the four as James was not concerned with developing a social theory (see Wiener, 1975, p. 115). His acceptance of American democracy led him to emphasize the importance of individuality and freedom so that democratic theory played an 'inspirational'

role in shaping his thought. His emphasis on the individual and his failure to give social institutions their due in shaping conception (see Wiener, 1965, p. 112), is sometimes detrimental to his psychology. But James simply was not a social theorist; he formulated an individualistic, idealistic view of American democracy, selecting premises from it that corresponded with his philosophical commitments and left the matter there. He was influenced strongly by democratic ideals but he did not specifically explore the implications of the democratic theory.

Pragmatism was thus born under extremely problematic circumstances for it had to reevaluate and assimilate the competing demands of several diverse and logically incompatible theories. The pragmatists were no freer than any group of philosophers have ever been to select particulars from theories and to ignore the larger assumptions in which these particulars were embedded. Their task was difficult and the ultimate success or failure of James' epistemology must be analyzed in terms of the historical conditions wherein it arose.

We can conclude, thus far, that James' pragmatism is largely the result of the interaction of certain 'transformed' evolutionary conceptions with other selected philosophical propositions. While James used 'scientific' evolutionary conceptions to limit the role of science in determining metaphysical choices and to simultaneously extend his metaphysic, that metaphysic took its content primarily from Renouvier's conception of free will.

Thayer writes that the will to believe is the forerunner of James' pragmatism, and the relationship between the two doctrines is obvious and substantial (see Thayer, 1968, p. 134). The will to believe in ideas unprovable by traditional or empirical methods has immediate

consequences for the believer, and potential consequences for the concrete world of realities. A pragmatic approach to belief was the next step in James' philosophical development, for the pragmatic method was constructed to determine the active 'meanings' of beliefs, in terms of their practical consequences for the individual. Brennan writes: "Pragmatism means that concepts should be reduced to their positive experienceable operations" (Brennan, 1968, p. 53). Pragmatism is thus a method for analyzing problems; at the same time it is a theory of truth. Much has been written in praise of both the will to believe and pragmatism as bringers of moral and religious freedom into a world otherwise dominated by scientific materialism (see, for example, Roth, 1969). If James was stimulated by the 'success' of the scientific achievements of his day, he was wary of their metaphysical and moral consequences. Thus, pragmatism as an epistemology must be assessed in terms of its success as a method for determining the meaning of any proposition and as a theory of truth regarding the discovery of objects in the three major spheres of reality as James isolated them. These include the ordinary world of sensible realities, the realm of science, and the domains of necessary truths, ethics, and metaphysics.

James' Theory of Meaning

The major proposition that was extracted and transformed out of Darwin's biological theory of evolution was the concept that the universe is both temporal and mutable; sensible objects and their relations change over time, and new objects and relations are spontaneously generated in time. This proposition had major epistemological implications. First of all, it meant that there were no guaranteed permanent possibilities of sensation, so that perception became the critical means of ascertaining whether or not an idea in the mind had a sensible

correlate in the physical world. Secondly, James applied the concepts of temporality and mutability to describe the status of human knowledge itself. The meaning and truth of a proposition could no longer be given in absolute a priori terms; 'new' ideas arose in the mind, through the process of spontaneous variation and a means of testing the truth or falsity of these ideas had to be determined.

If the mind was in fact efficacious, and if novel ideas appeared in the mind through the process of spontaneous variation, the evolution of the universe would depend not only on biological changes, but on changes introduced by its sentient human inhabitants. Linking the novel ideas of the mind to some form of rationalistic Absolute violated James' primary belief in the efficacy of the human mind, and his insistence that free-will was a viable possibility. His problem was to construct an epistemology that would guarantee that ideas in the mind could be verified in perception, without recourse to permanent possibilities of perception. At the same time, he had to find a means of determining the meaning of those ideas which did not have immediate implications for action without recourse to some absolute, a priori construction of Truth. He was to reason that if novel ideas were to be effective in facilitating the evolution of the universe, they must finally result in perceptually verifiable consequences. Thus, the meaning of a theory or concept became dependent upon the practical consequences it had for the future, and a 'meaningful' concept could be defined as one which instills specific expectations in the individual as to the probable outcome of his future activities. If two theories lead to the same practical consequences, they are said to have the same meaning and any further argument is irrelevant. This is the core of James' pragmatic theory of meaning: to determine what an idea means is to determine what afferent sensations could be expected

should the idea be discharged into physical movement (see James, 1907/1913, pp. 46-47; quoted above, p. 461).

James based his theory of meaning on Peirce's and this led to a dispute between the two: Peirce was concerned with developing a theory of meaning which would clarify scientific language by providing common definitions of conceptions. Peirce rejected nominalism in favour of realism, for he felt that specific scientific conceptions had to be universally recognized if they were to be of value in facilitating research. He criticized James' application of the pragmatic maxim of meaning to metaphysical disputes because he argued that when the meaning of any metaphysical position is equated with practical consequences, that meaning cannot be assumed to have a universal character. Nor did James ever intend that it should, but this point is obscured by James' promotion of certain metaphysical and moral positions which he himself believed would have the best consequences for the individual. James intended, at least, to remain a nominalist. As Thayer writes:

> While Peirce dissented from James's Will to Believe and his account of truth, the underlying discord is realism vs. nominalism. It divides James's pragmatism from Peirce's pragmaticism. What counted as the "consequences" of thought or belief for James was just that level of experience which excluded generality, and thus meanings, for Peirce, viz., practical effects, sensations, conduct, actions. To James it is this level of live differences of choice, chance, and resolutions that is most "meaningful" (Thayer, 1968, p. 140).

A lot of controversy has been generated over whether James' appropriation of Peirce's doctrine of meaning could survive the translation into metaphysical and nominalist terms. The consensus appears to be that while James' theory contains serious problems, he opened the way for a freer account of truth and meaning (see Thayer, 1968, pp. 146-153; Ayer, 1968, pp. 196-201; and Roth, 1969, pp. 94-95). James, according to Roth, produced a theory of meaning that was broadly empirical,

future-oriented, and fallibilistic or situational (see Roth, 1969, pp. 94-95), and Roth concludes that James did in fact produce a viable theory of meaning.

James' intention was to construct a theory of meaning that would put an end to otherwise interminable metaphysical disputes by looking at the consequences of taking each position. Unfortunately, he does not extend the analysis of his proposed method beyond this but goes on immediately to apply this conception to various metaphysical problems. And unfortunately, he does it badly. In the Pragmatism he presents a hypothetical case wherein a theist and a materialist give complete explanations as to the history of the world:

> Both theories have shown all their consequences and, by the hypothesis we are adopting, these are identical. The pragmatist must consequently say that the two theories, in spite of their different-sounding names, mean exactly the same thing and that the dispute is purely verbal. (I am supposing, of course, that the theories have been equally successful in their explanations of what is.) (James, 1907/1913, p. 97).

James chooses the theistic approach on the basis of the optimism this should generate among men. Materialism, according to James, leads to pessimism, theism to optimism, and for James, this is the crucial difference in the 'meaning' of the two accounts (see James, 1907/1913, pp. 96-100). And this can be criticized in two ways. James may be justified in choosing theism in light of the consequences he sees accruing from this selection. But the choice must be seen as a personal choice. James is personally free to advocate theism; he is not free, as a philosopher, to try to show that the practical consequences of the choice between materialism and theism can be pre-determined through his method of meaning. This runs against his nominalism, against his contention that "There can be no final truth in ethics, any more than in physics, until the last man has had his experience and said his

say" (James, 1891/1911, p. 184). If James' theory of meaning is really going to work in terms of the principles determined for pragmatism--e.g., individualism, mutability, and temporalism, meanings cannot be legislated ahead of time. James' theory of meaning is only consistent with his broad philosophical position when the consequences of espousing one view over another are decided by each individual. Some men may find more profound, life-giving options arise from selecting theism; others may find the same, or equally valuable consequences in accepting materialism.

Once outcomes are concretized into universal effects, they simply become part of the pragmatic theory itself--part of its 'information' base--and the theory of meaning is no longer viable in resolving disputes between metaphysical theories. The theory of meaning can be seen as the philosophical analogue to the psychological 'search' for the correct conception. This would mean that the theory of meaning should be utilized to determine what the correct conception or meaning of the dispute <u>is</u>--in the case cited above (see James, 1907/1913, p. 97, quoted above, p. 485), the <u>real</u> meaning of the dispute is given as the optimistic or pessimistic consequences for the individual. The theory of meaning, like the search for the correct conception, is intended to reduce any dispute to its particular consequences. James 'blurs' the philosophical purpose of the theory of meaning by making the consequences of the concepts fixed and universal.

Furthermore, the pragmatic theory of meaning is limited expressly to the consequences that accrue to the individual through his acceptance of a given theory. James tries to limit the implications that result from the juxtaposition of two theories by limiting consequences to the broad acceptance of one theory over another. If one accepts

theism, the consequences are limited to James' example of optimism and hope. But the very juxtaposition of theories, and the contents of the rejected theory, have consequences as well. Accepting theism, in conjunction with rejecting materialism, must carry different philosophical implications for the individual than when he accepts theism, in conjunction with rejecting Manichaeanism, for example. The content of the rejected theory influences the way in which problems will be analyzed in terms of the structure of the accepted theory. James' psychology itself provides a case in point.

Much of this thesis has revolved around the 'historical' sources of James' theories because his 'borrowings' and rejections have wider consequences for the continuous development of his theories than are immediately implied in his rejection or acceptance of particular postulates. James' espousal of Renouvier's concept of free will and his subsequent rejection of automaton theory provides an obvious example. James did not simply affirm Renouvier's postulate by following Renouvier's lead and becoming a neo-Kantian philosopher. Instead, he began work on a psychological theory of consciousness which would leave room for the possibility of free will but serve, at the same time, to 'correct' Spencer's definition of mind. Granted, James' theory of consciousness--in fact, his motivation to develop a psychological theory of consciousness--owes much to his positive borrowings from British empiricism and from Darwin, so that his psychology is 'more' than an affirmation of Renouvier and a rejection of automaton theory. At the same time, his 'rejections' and his 'borrowings' are consistent; he affirmed those postulates which pointed towards or could be made to point towards an efficacious consciousness, and rejected those which could not. He furthermore felt the need to systematically refute

statements which tended towards automatism within the empiricist tradition itself while largely accepting that system, so that his productive postulates are constructed to countermand the postulates of other theories, as well as standing as postulates in their own right. His refutation of the theory of innervation is a case in point here. In short, James' whole psychology and philosophy is coloured not only by his acceptance of Renouvier, but by his rejection of the automatists. Had he 'accepted' Renouvier in the context of rejecting Calvinist predestination, it is unlikely that he would have felt a strong compulsion to specifically refute Spencer. To make sense of James' theory of interest and conscious selectivity, we have therefore had to examine not only the positive influences upon his thought (e.g., Darwin, Renouvier, and British empiricism, but the negative ones (automaton theory and some aspects of British empiricism) as well. Thus the interaction between the selection of one theory and the rejection of another carries many meaningful consequences beyond the inspirational effects discussed by James in his Pragmatism. The rejected theory has a determinative effect upon what the individual will actually do.

Fortunately, the validity of James' pragmatism does not rest on his theory of meaning alone. James developed a theory of truth in conjunction with his theory of meaning which was much more fully worked out, and which constituted the essence of his pragmatism. And within the framework of his theory of truth, he admitted that a one-dimensional view of practical consequences was insuffient to accept or reject a theory. For a given theory may yield suitable practical consequences, and at the same time it may clash with other truths or beliefs. He writes:

> If I could restrict my notion of the Absolute to its bare holiday-giving value, it wouldn't clash with my other truths. But we can not easily thus restrict our hypotheses. They carry supernumerary features, and these it is that clash so. My disbelief in the Absolute means then disbelief in those other supernumerary features, for I fully believe in the legitimacy of taking moral holidays (James, 1907/1913, p. 79).

His position is still problematic for he does not expand on the effects of the supernumerary features of the theory, or on those portions of it he selects for ratification because they coincide with other beliefs. Instead, he writes "I just take my moral holidays; or else as a professional philosopher, I try to justify them by some other principle" (James, 1907/1913, p. 79). James often displays this tendency to simply accept a proposition for its own merits, disregarding the context in which it arose, or else he abstracts a belief and tries, as he says, to justify it by some other accepted principle. This often leads to problems in interpreting James' meanings as they attach to the selected portions of philosophical systems, for he is often unclear as to how much of the total system he has accepted. Whether the theory of truth is capable of coping with such selective borrowing and whether or not it constitutes a unified epistemological method must now be analyzed.

James' Theory of Truth

Thayer, discussing Peirce's belief that pragmatism had to be limited to a theory of meaning, adds that:

> questions of truth can arise when the method is applied to ekeing out the meaning of terms. Moreover, since the method enjoins us to look for the meaning of terms by considering their application to objects in experimental situations with (conceivable) experimental consequences, some notion of truth and verification is foreshadowed in the method itself. Finally, there is evidently no reason why the term 'truth' is not a fit subject for pragmatic analysis of meaning. But a pragmatic definition of truth, if possible, is surely just that incursion of pragmatism into truth theory that Peirce renounced as

unpragmatic (Thayer, 1968, p. 135).[12]

And here we come to the final parting of the ways between Peirce and James. In choosing to develop a theory of truth in addition to the theory of meaning, James broke away from Peirce so that the pragmatic theory of truth must be regarded as a strictly Jamesian contribution to the pragmatic movement. This development finally declared James' philosophical independence from Peirce and Peirce was moved to re-name his own doctrine pragmaticism (see Perry, 1935/1974, 2, p. 409). Thayer is convinced that with the development of his theory of truth, James doubled the scope of pragmatism; in addition to determing the meaning of a concept, the pragmatist could also ask whether or not the idea was true. Furthermore, the theory of truth had two major functions: "because theories are instruments according to James, pragmatism is a device enabling us in specific instances to discover and attain true beliefs; pragmatism is also a means for explaining the meaning of truth generally" (Thayer, 1968, p. 135).

The need for a new theory of verification had its basis in the dissatisfaction the pragmatists felt with traditional empiricism. According to Thayer, the most bothersome points in British empiricism were the interpretation of sensation and ideas, and the reductionist analysis of mental phenomena (see Thayer, 1968, p. 137). We have shown that James' construction of consciousness was anti-reductionist; thoughts are not faint copies of sensations, and conceptualization does not copy reality. Thus as Thayer points out, James, and Peirce and Dewey with him were motivated to change the 'focus' of empiricism,

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12. See also Lovejoy, 1963, pp.3-5, for his distinction between theories of meaning and truth. Lovejoy claims that a theory of truth is not necessarily a logical outcome of a theory of meaning.

and to concentrate on the consequences of beliefs (see Thayer, 1968, p. 137). For James, this shift of focus meant that since conception does not 'copy' reality, truth becomes an active property of belief. "Realities are not true, they are; and beliefs are true of them" (James, 1909, p. v). Truth becomes a way of describing the relation between thought and reality; truth also becomes a process of validating or verifying an idea.

The function of any feeling or thought is to lead us into a satisfactory relationship with reality. Whether our ideas are true or false--and because conception does not 'copy' reality, we have no a priori knowledge about the truth or falsity of any idea--depends on active experience. The validation of any idea has ramifications for future experience because the validation or falsification of any idea guides our future relationships with reality.

Roth gives a good description of the way in which James' theory of truth was built on the 'redefined' evolutionary ideas that gave pragmatism its start:

> There are some implications of this idea that are of great importance. Man's experience and his world are continually moving and developing. Corroboration and verification are processes that are temporal and ongoing. As long as experience continues, verification is incomplete and our knowledge is fallible. This means that when we speak of the truth of an idea we must always say that it is true "insofar" as it has been verified, or that it is true "to the extent that" it has been verified. A further implication is that if corroboration and verification are temporal processes, then truth itself is also temporal. Truth is a property of ideas, and if we live in a world in which both facts and ideas are present and changing, truth may grow, develop, and change. Thus, James suggests: "Truth happens to an idea. It becomes true, is made true by events" (Roth, 1969, pp. 97-98; internal quotation from James, 1909, p. vi).

Truth is temporal; it is continually subject to experience so that verification is a life-long process. Verification, or the process by which ideas become true, is a dynamic process and the pragmatic

theory of truth as a process is the philosophical analogue of James' functional psychology. But James' pragmatic theory of truth is more complex than this description implies. We have already shown that the individual moves between several worlds of reality, and we have shown that the nature of belief varies as a function of the nature of the particular set of objects it is applied to. Thus, the process of verification and the meaning of truth must vary according to the nature of the worlds they describe. The process of verification is actually broken down into several processes of verification and the meaning of truth correspondingly becomes the meanings of truth.

Ayer illustrates this point by putting all of James' definitions of truth together:

> He gives various formulations of the theory, which are by no means obviously equivalent; to an unsympathetic critic it might even seem that some of them were mutually inconsistent. Thus, in his lectures on Pragmatism, he asserts successively that 'ideas (which themselves are but parts of our experience) become true just in so far as they help us to get into satisfactory relations with other parts of our experience'; that 'a new opinion counts as "true" just in proportion as it gratifies the individual's desire to assimilate the novel in his experience to his beliefs in stock'; that 'if theological theories prove to have value for concrete life, they will be true, for pragmatism, in the sense of being good for so much'; and that 'for how much more they are true, will depend entirely on their relations to the other truths that also have to be acknowledged'; that 'the true is the name of whatever proves itself to be good in the way of belief, and good, too, for definite, assignable reasons'; that 'true ideas are those that we can assimilate, validate, corroborate and verify; false ideas those that we cannot'; that 'truth happens to an idea', that its verity is in fact an event, a process, the process namely of its verifying itself, its veri-fication;its validity is the process of its valid-ation'; that we have 'a general stock of extra truths, of ideas that shall be true of merely possible situations' and that 'whenever such an extra truth becomes practically relevant to one of our emergencies ...you can say of it then either that "it is useful because it is true" or that "It is true because it is useful"'; that 'both these phrases mean exactly the same thing, namely, that here is an idea that gets fulfilled and can be verified'; that '"the true", to put it very briefly, is only the expedient in the way of our thinking, just as "the right" is only the expedient in the way of our behaving; expedient in almost any fashion and on the whole of course; for what meets expediently all the experiences

> in sight won't necessarily meet all further experiences equally satisfactorily'; and finally that 'the "absolutely" true, meaning what no further experience will ever alter, is that ideal vanishing point towards which we imagine that all our temporary truths will some day converge' (Ayer, 1968, pp. 196-197).

This juxtaposition has the effect of making us ask along with Ayer's unsympathetic critic, whether indeed the definitions of truth are mutually consistent as James intended them to be.

James explicitly set out to develop a pluralistic account of truth. He never intended that only one process of validation should be utilized, or that only one kind of truth could be generated. Instead, James proposed that the several definitions were consistent with one another because they shared a common quality: they all paid. Furthermore, the means to truth were consistent: all truths are made:

> Our account of truth is an account of truths in the plural, of processes of leading, realized in rebus, and having only this quality in common, that they pay. They pay by guiding us into or towards some part of a system that dips at numerous points into sense-percepts, which we may copy mentally or not, but with which at any rate we are now in the kind of commerce vaguely designated as verification. Truth for us is simply a collective name for verification-processes, just as health, wealth, strength, etc., are names for other processes connected with life, and also pursued because it pays to pursue them. Truth is made, just as health, wealth and strength are made, in the course of experience (James, 1907/1913, p. 218).

Instead of one absolute body of truth which we seek to discover, truth is at once a collective name for the processes of verification, and the collected habits of thought. Truths, as they are discovered, are equated with habits, for these 'truths' or 'facts' are the concrete ideas we rest with, in between bouts of verification: "truth becomes a habit of certain of our ideas and beliefs in their intervals of rest from their verifying activities" (James, 1907/1913, p. 222). Verification, in any sphere of reality is the important process for without active verification, there could be no habits to rest upon. But the individual cannot afford to rest upon the 'truths' he has gained for too long for: "Experience,...has ways of boiling over, and

making us correct our present formulas" (James, 1907/1913, p. 222).[13]

And if we must content ourselves with a collection of verification processes and 'habits' of thought, James believes that we still aim for absolute truth:

> The 'absolutely' true, meaning what no farther experience will ever alter, is that ideal vanishing-point towards which we imagine that all our temporary truths will some day converge. It runs on all fours with the perfectly wise man, and with the absolutely complete experience; and, if these ideals are ever realized, they will all be realized together. Meanwhile we have to live to-day by what truth we can get to-day, and be ready to-morrow to call it falsehood. Ptolemaic astronomy, euclidean space, aristotelean logic, scholastic metaphysics, were expedient for centuries, but human experience has boiled over these limits, and we now call these things only relatively true, or true within those borders of experience. 'Absolutely' they are false; for we know that those limits were casual, and might have been transcended by past theorists just as they are by present thinkers (James, 1907/1913, pp. 222-223).

There is no assurance that absolute truth will ever be achieved: James' perception that the great systems of the past have succumbed to the growth of human experience now makes him wary of putting too much faith in the chance that Absolute truth will ever be a certainty.[14] He

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13. The theory of truth is the philosophical parallel of the psychological description of the emergence of habit patterns out of the instinctive impulses. It also correlates with the psychological theory of belief and the 'selection' of physical objects and relations as 'real' events. But the 'status' of external events has taken on a new dimension in the transition from the psychological to the philosophical paradigm: in the Principles, James maintains that although the external world is in a state of constant change, we impose our conceptions upon it so as to get in perception not the same sensation, but the same object. He is now maintaining that experience is unstable enough to force the individual into 'correcting' his conceptions of events.

14. This statement is important in showing the development of James' thought. In the Principles, he emphasized the cumulative growth of science, stating that ethics should take heart from the measure of progress so far achieved. The task of ethics was simply the longer task. While he recognized that scientific conceptions were discarded when they were found wanting, he claimed that the critical test of a scientific theory was the success or failure of the attempt to find empirical correlates for propositions. He has now moved out of the pre-evolutionary concept of discovery and is moving towards a relativistic conception of history and the process of discovery. The concepts of temporality,

(contd.)

postulates instead, that the world is temporal and mutable, and truth is a cumulative process, determined by the experiences of the past, and open to change in the future:

> I have already insisted on the fact that truth is made largely of previous truths. Men's beliefs at any time are so much experience funded. But the beliefs are themselves parts of the sum total of the world's experience, and become matter, therefore, for the next day's funding operations. So far as reality means experienceable reality, both it and the truths men gain about it are everlastingly in process of mutation--mutation towards a definite goal, it may be--but still mutation (James, 1907/1913, pp. 224-225).

If absolute truth is unlikely to be achieved, the verification processes and the beliefs that generate and are generated within the search are crucial, for they are the particulars which both determine and constitute the eventual sum of experience. They are, pragmatically, the only truths that do matter, for they are the only truths available. These partial truths may be leading us to some ultimate goal or the world may in fact be undetermined. For the present, all that James can allow is that these truths constitute human experience.

James makes the distinction between the pragmatist and the rationalist on the grounds of the mutability of experience. He says that both doctrines will allow that: "Experience is in mutation and our psychological ascertainments of truth are in mutation" (James, 1907/1913, p. 226). But while the pragmatist contends that this is the real meaning of truth and experience, the rationalist holds that beyond experience "Reality stands complete and ready-made from all eternity, ...and the agreement of ideas with it is that unique and unanalyzable virtue in them of which she has already told us" (James, 1907/1913,

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14. (contd.) and mutability, more or less confined to consciousness in the Principles are now taking on a broader frame of reference; they describe the 'conditions' of the physical world and man's relationship to that world (See James, 1907/1913, pp. 224-225).

p. 226). For the rationslist, truth exists eternally and staticly apart from experience; for the pragmatist, truth is manufactured within the diversity of experience.

If the rationalist has the problem of discovering 'pre-existing' truth, the pragmatist has the problem of relating the truths generated through one process to the truths generated through another. For the pragmatist the function of belief lies in making us act. Beliefs change according to new facts or truths and we act again. The rationalist struggles to bring his experiences in line with abstract principles; the pragmatist must struggle to connect his various worlds of experience together. James describes the 'truth' process as follows:

> In the realm of truth-processes facts come independently and determine our beliefs provisionally. But these beliefs make us act, and as fast as they do so, they bring into sight or into existence new facts which re-determine the beliefs accordingly. So the whole coil and ball of truth, as it rolls up, is the product of a double influence. Truths emerge from facts; but they dip forward into facts again and add to them, which facts again create or reveal new truth (the word is indifferent) and so on indefinitely. The 'facts' themselves meanwhile are not true. They simply are. Truth is the function of the beliefs that start and terminate among them (James, 1907/1913, p. 225).

This basic verification process may be applied (with variations in methodology) to any one of the sub-worlds of reality. Given that we have different relationships with different levels of reality, we may fairly ask whether or not the truths manufactured in one realm may ever be applied with equal effect to another. That is, does pragmatism as a methodology serve any unifying function in tying experience together, as rationalism does for its proponents, or is it in the end merely a collection of verification processes selectively applied to the various levels of reality? Does pragmatism have anything to say about the changes in meaning of a fact as it is transported from one level

of reality to another?[15] Is the conclusion that truths pay a sufficient ground for a unified epistemology, or does the meaning of 'pay' also change to correspond with the level of reality it is applied to? James refers to the 'whole coil and ball of truth'; in other places he speaks of 'systems of belief' wherein new theories are assimilated or accepted according to their 'fit' with the presently held system (see James, 1907/1913, p. 63). This implies that however mutable, temporal, and fluctuating our particular conceptions of 'truth' may be, conceptual systems will have a certain internal 'unity' for the individual. He has a certain stock of beliefs and he judges new experiences in terms of their compatibility with his pre-established framework of beliefs. If pragmatism is to serve as a full epistemology it must be able to deal with the 'transportation' of 'truths' from one sub-world to another, and it must provide a means for the subjective, as well as the objective assessment of new ideas against pre-existing value-structures for: "truth is made largely out of previous truths" (James, 1907/1913, p. 224).

Ayer believes that James errs in failing to make it explicit enough that beliefs work in different ways:

> The equation of true beliefs with those that work is intended to apply to beliefs of every sort. What he should have made much clearer than he does is that true beliefs are not treated by him as being all of a pattern. They all work, but they work in different ways. The criteria by which we have to assess a belief which relates to a matter of empirical fact are different from those which apply to a belief which is concerned only with relations between ideas: and these are different again from the criteria which apply to beliefs whose function is to satisfy our moral and emotional requirements. These distinctions are implicit in James's writing, but he does not draw attention to them. In my view, it is his failure to set them out explicitly that has been mainly responsible for the extent to which his

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15. Note the transposition of scientific objects from theoretical objects to sensible correlates for example.

position has been misunderstood (Ayer, 1968, p. 201).

Thus, Ayer believes that the problems in interpreting the theory of truth arise because James failed to differentiate clearly between the criteria necessary to distinguish the categories of belief from one another. White on the other hand, repeatedly criticizes Ayer for underestimating what he (White) calls the 'holistic tendency' in James' pragmatism (see White, 1973, p. 107; see also White, 1973a, p. 117).

White claims that Ayer's analysis applies only to the 'trialistic' elements in James' Pragmatism, and fails to take account of the 'holistic' aspects of that work. The 'trialistic' elements, White tells us, link pragmatism to James' psychology; the holistic elements foreshadow his radical empiricism. If White is correct, then the Pragmatism contains, in effect, two answers to the questions posed earlier. White argues that James' pragmatism contains remnants of the 'trialism'--the separation of experience into three distinct modes of reality which characterizes the Principles and The will to believe--when he separates belief into three major categories. These categories include: "(a) beliefs coerced by sense-experience, (b) beliefs coerced by the relations between concepts, and (c) beliefs established by other means" (White, 1973, p. 204). In contrast to the trialistic system, wherein beliefs are accepted or rejected within relevant categories, White argues that James also develops a holistic account of the means by which any belief is accepted or rejected. White derives this argument from James' pragmatic statements that a new belief is tested against the whole stock of opinions in trade (see James, 1907/1913, pp. 59-64).

The problem with White's attempt to show at least the beginnings of unification through this type of holism is that White fails to enlarge upon the relationship between the psychological factors which

incline us towards belief or disbelief, and the means by which different types of beliefs are verified. Even if White is correct in attributing a holistic view to James in regard to his Pragmatism, this holism can only be applied to some aspects of the conscious processes whereby a new belief is assimilated or discarded. The new belief must be compatible with the old beliefs in stock: in fact, it must do more than this; it must serve "the function of giving human satisfaction in marrying previous parts of experience with newer parts" (James, 1907/1913, p. 64). But the new belief must still be 'categorized' and 'verified' according to the trialistic system. James writes:

> 'Radium' came the other day as part of the day's content, and seemed for a moment to contradict our ideas of the whole order of nature, that order having come to be identified with what is called the conservation of energy. The mere sight of radium paying heat away indefinitely out of its own pocket seemed to violate that conservation. What to think? If the radiations from it were nothing but an escape of unsuspected 'potential' energy, pre-existent inside of the atoms, the principle of conservation would be saved. The discovery of 'helium' as the radiation's outcome, opened a way to this belief. So Ramsay's view is generally held to be true, because, although it extends our old ideas of energy, it causes a minimum of alteration in their nature (James, 1907/1913, pp. 62-63).

The point here is that the belief system as a whole may guide the investigator looking for particular kinds of answers; the particular questions asked about any new 'object' will be concerned with those properties it exhibits which do not fit in with our existing ideas. But the actual or specific answers to these questions, which determine acceptance or rejection of the belief, can be found only in appropriate mode of experience (or sub-world). The answer to the problem of how to align the discovery of radium and its 'upsetting' properties, with current ideas about the conservation of energy could only be found in science. Theology, metaphysics, and sensory experience have little to offer. Unless White can show that a holistic process of verification is explicitly utilized by James, we must reject this view as accurately

describing James' pragmatic method of truth. White's 'holism' must be confined to the psychological continuity of consciousness as James structured it in the Principles. Ideas in the stream of consciousness are accompanied by 'fringes' which include emotional reactions, aesthetic inclinations, and other associated feelings. Holism, in this sense is built into the structure of consciousness itself and its reappearance in pragmatism would therefore emphasize the psychological foundations of James' philosophy. This analysis, then, must still take account of the problem posed by Ayer and we must follow Ayer's example and examine the processes of validation as they are applied to the specific modes of experience.

On the other hand, to simply conclude that the criteria for assessing beliefs differ according to the kind of belief involved as Ayer does may not be sufficient to refute White's claim that James is attempting to move away from the trialism of the Principles by concentrating on the practical or perceptual consequences of belief and by insisting that 'new' truths must be evaluated in relation to the whole stock of opinions in consciousness. James' aims and his success in achieving them can only be revealed by an examination of the methods of truth as they are applied to the sub-worlds of sensible objects, necessary truths and ideal relations, science, and ethics and metaphysics.

The World of Sensible Reality

Active experience is the crucial test of the truth or falsity of our ideas, and our relationship with the external world is necessarily built upon a process of verification or validation of feelings or thoughts. James equates the process of determining the truth or falsity of ideas about the sensible world with the verification principles that apply to science, in an attempt to give a systematic interpretation

of the adjustment process which is blind at onset, and acquires its ends through experience and development:

> Everywhere, these teachers [Schiller and Dewey] say, 'truth' in our ideas and beliefs means the same thing that it means in science. It means, they say, nothing but this, that ideas (which themselves are but parts of our experience) become true just in so far as they help us to get into satisfactory relation with other parts of our experience, to summarize them and get about among them by conceptual short-cuts instead of following the interminable succession of particular phenomena. Any idea upon which we can ride, so to speak; any idea that will carry us prosperously from any one part of our experience to any other part, linking things satisfactorily, working securely, simplify ing, saving labor; is true for just so much, true in so far forth, true instrumentally (James, 1907/1913, p. 58).

Because the phenomenal world is so diverse and fluctuating, conception cannot efficiently 'copy' its particulars as they appear in space and time. The individual is also congenitally equipped with basic needs, drives, desires, impulses, and these provide the impetus for the selection of some objects as relevant, interesting etc., and the concomitant ant rejection of others. 'True' ideas therefore serve as links between biological needs and the external objects which satisfy or fail to satisfy these needs. 'True' ideas about the sensible world correspond, psychologically, to 'beliefs' about the sensible world (see Chap. 4); we have an idea and if we find that reality 'fits' our idea, we must call the idea true. Finally James makes a parallel between the verification of ideas about the sensible world and the scientific method because in both cases objects are sought in the concrete physical world which correspond to ideas in the mind.

The process of verification has major implications for individual adjustment and survival for it is the means through which 'habits' of belief are formed. 'True' ideas unite the phenomenal world of particulars in the ways which best serve our biological and instinctive needs. As 'habits' of belief or truth develop, a new idea can be assimilated into the structure and "counts as 'true' just in proportion as it

gratifies the individual's desire to assimilate the novel in his experience to his beliefs in stock. It must lean on old truth and grasp new fact" (James, 1907/1913, p. 63). The 'truth' or 'falseness' of ideas in this context consists of the relation between the idea and the world of sensible experience. Ideas or feelings in themselves are neither true nor false any more than objects are true or false. Truth is manufactured out of the interaction between thought and reality so that James is thus able to write: "The true is the name of whatever proves itself to be good in the way of belief, and good, too, for definite, assignable reasons" (James, 1907/1913, p. 76).

Good, in this sense, relates to our needs to adjust to the external world. A belief is good, if it extends our capacities for finding our way through the morass of sensible particulars and relations. An idea is good when it tells us what afferent sensations we can expect, or when it tells us which object will satisfy a demand. The terms 'good' and 'true' have no explicitly moral connotations. "True ideas are those we can assimilate, validate, corroborate, and verify. False ideas are those we cannot" (James, 1907/1913, p. 201): this statement sums up James' theory of truth as it describes our practical relations with sensible reality. If an idea bears no resemblance to an object, or tells us nothing about possible relationships with objects, then it has no practical utility. The verification process is the only means we have of determining whether or not an idea 'fits' with the real world. If the idea does not 'fit', then it is false for that mode of experience, though it may very well be verifiable, and potentially 'true' in another world of experience. Thus, "Truth happens to an idea. It becomes true, is made true by events. Its verity is in fact an event, a process: the process namely of its verifying itself, its veri-fication. Its validity is the process of its valid-ation" (James, 1907/1913,

p. 201).

Finally, ideas may be 'potentially' true. Along with our stock of verified truths, we hold ideas which we assume will be true because they fit in with our other verified beliefs. Potentially true ideas may tell us what to expect in situations we may not have encountered yet and these ideas, which connect with our validated beliefs or stock of 'truths', are extremely important, for we can appeal to these potential truths in emergency situations. James believed that in the process of their verification, they 'save' us, and thus their 'practical' value, even in an unverified state, is high, so that it is well for us to believe in them even though we have not yet actually had occasion to verify them. The problem is that James does not make it clear that these ides are only potentially true when he writes:

> The importance to human life of having true beliefs about matters of fact is a thing too notorious. We live in a world of realities that can be infinitely useful or infinitely harmful. Ideas that tell us which of them to expect count as the true ideas in all this primary sphere of verification, and the pursuit of such ideas is a primary human duty. The possession of truth, so far from being here an end in itself, is only a preliminary means towards other vital satisfactions. If I am lost in the woods and starved, and find what looks like a cowpath, it is of the utmost importance that I should think of a human habitation at the end of it, for if I do so and follow it, I save myself. The true thought is useful here because the house which is its object is useful. The practical value of true ideas is thus primarily derived from the practical importance of their objects to us. Their objects are, indeed, not important at all times. ...Yet since almost any object may some day become temporarily important, the advantage of having a general stock of extra truths, of ideas that shall be true of merely possible situations, is obvious (James, 1907/1913, pp. 203-204).[16]

The perception (of a cow-path in the above example) serves a critical function in James' epistemology. The individual who is lost in the

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16. See also Lovejoy, 1963. Lovejoy states that pragmatic theories must have predictive potential if they are to be functionally meaningful. They must incorporate "some means of telling what predictors are to be accepted as sound while they are still predictions. ...Otherwise, the doctrine is sterile" (Lovejoy, 1963, pp. 12-13).

woods is faced with a problem which requires a decision on how he is to act to save himself. The perception of the cow-path provides the critical piece of information from the sensible world which allows him to arrive at the 'correct conception' or 'reasonable solution' of his dilemma. The existence of the cow-path is an undeniable fact for the individual; his task is to discover its 'meaning'--in this case, that there must be a human habitation at its end. Thus James concludes that the 'true' meaning of the perception of the cow-path is that there will be a human habitation at the end of it. 'True' ideas in this sense correspond with correct conceptions; if the stimulus object, or physical fact, is not correctly or reasonably interpreted by consciousness, it has no practical value for the individual. The individual must come up with a belief or 'true' idea that is sufficiently stable or satisfactory to inhibit any competing ideas in consciousness so that he will act.

The problem is that James appears to be confounding truth with belief when he states that "true ideas are those we can...verify" (James, 1907/1913, p. 201). The cow-path is a fact; the true idea in consciousness is that the path is there. The existence of the house at the end of the cow-path is an idea in consciousness that can be potentially verified but until it is verified, it is only a belief or potential truth. Believing that there is a house at the end of the path is useful; the belief in the possible existence of the house is sufficient to lead the individual along the path. But the idea of the house is not 'true' until the individual actually sees the house before him. The idea has to be verified; believing that the house is there does not mean that the house actually exists. Nor does it mean that even if the house exists, reaching it will guarantee salvation. The problem with James' emphasis on determining the consequences or meaning of any idea and

then correlating meaning with truth lies in the fact that the selection of any action in terms of its possible afferent effects or consequences still does not make those consequences determinable in any absolute sense beforehand. A stock of potentially true ideas enhances the individual's chances for survival; it cannot guarantee it. Expectations regarding the potential afferent sensations or possible perceptions have a determinative effect on what the individual will actually do, but as Thayer points out "to believe that a fact will occur may be one of the causal conditions contributing to the actual occurrence of the fact; but the truth or falsehood of the belief, its truth value, are not causal agents" (Thayer, 1968, p. 155).

The verification of ideas about the sensible world, and the distinction between 'true' or verified ideas and potentially 'true' ideas is particularly important because James had once again moved away from a 'copy' theory model for the verification of sensible ideas. He concluded in "The relation between knower and known" that if an idea enabled the seeker to find the object, the idea was true (see James, 1904/1909, p. 115). Substantively, the idea need not resemble the object--if the idea can lead the individual to the object, so that he recognizes the object as satisfying his demand, this is all that is required for the idea to be true (see Perry, 1935/1974, 2, pp. 454-455). This step brought James' pragmatism into line with his psychology (see James, 1890, 1, p. 471; see also Chap. 3, pp. 204-214), and rid his epistemology of the last traces of the copy theory of the empiricist tradition. But James was commited to empiricism so that the more abstract he made his definition as to what might count as a potentially true idea about the sensible world, the more he had to stress that the function of ideas was to lead the individual into sensible reality. Correspondingly, the actual perception that

verifies the idea in consciousness takes on an added importance.

Finally, James' insistence that the individual was well-served by maintaining a 'general stock of extra truths' is evidence for White's hypothesis that James was moving towards a holistic account of knowledge. Unverified ideas about the sensible world are maintained in consciousness as 'true' ideas so that psychologically speaking, they might be said to serve the same function as the unverified metaphysical axioms which guide our search for objects which will corroborate our theories and thus facilitate the rationalization of the sensible world. This seems to have been James' intention: ideas which belong to any sub-world of reality have a common function--they lead us into new and satisfactory relationships with reality. Thus James believed that pragmatically speaking, unverified ideas could be treated as 'true' before they were verified in perception. This would satisfy Lovejoy's argument that if pragmatic theories are to be functionally meaningful they must incorporate "some means of telling what predictors are to be accepted as sound while they are still predictions" (Lovejoy, 1963, p.12). The problem that arises is whether or not the evolutionary construction of pragmatism actually enables the individual to construct sound predictors of sensible reality beforehand, or whether such predictions are always subject to the exigencies of experience. As the following discussion of James' pragmatic conception of science will show, James was moving away from the Newtonian world-view of the Principles and into a more relativistic, evolutionary account of the physical world and man's relationships with that world. And in confounding 'potential' and 'verified' truths, James once again appears to be lapsing into the same kind of rationalism that led him to postulate that the 'fit' between scientific hypotheses and the sensible world had so far been so successful that it would eventually be possible to

assume that scientific theories were true if they were logically consistent (see James, 1890, 2, pp. 669-671). In the case of the potential truths, James seems to be assuming that the 'build-up' in consciousness of verified ideas about the sensible world will be so great that the individual will be able to make true or factual predictions beforehand concerning the existence of the sought-after object. That is, he fails to distinguish between the individual's psychological treatment of the ideas as true, and the epistemological problem of whether or not the idea really is true.

The pragmatism in this sense can be taken as the 'halfway' point in James' philosophication of evolutionary theory. While he typically emphasizes that truth is made in the process of verification, that to be true, an idea must be verified in the sensible world, and that the world is still in the making, he occasionally lapses back into the progressive or Newtonian world-view in his attempt to emphasize the efficacious qualities of human consciousness in 'knowing' the world.

Necessary Truths and Ideal Relations

Like the world of sensible objects, the world of necessary truths and ideal relations is structured to facilitate the verification of new ideas. But the exact status of these 'truths' is difficult to determine. In his 1904 paper, "Humanism and truth" James stated that:

> Relations of comparison are matters of direct inspection. As soon as mental objects are mentally compared, they are perceived to be either like or unlike. But once the same, always the same, once different, always different, under these timeless conditions. Which is as much as to say that truths concerning these man-made objects are necessary and eternal. We can change our conclusions only by changing our data first (James, 1904/1909a, 2, pp. 84-85; see also James, 1890, 2, p. 641).

This is essentially the same position that James took in the Principles in 1890. But James did not consistently integrate his 1890 conception

of the immutable nature of the necessary truths into his pragmatism and White concludes that:

> In spite of James' statement in 1904 that his pragmatism was compatible with the view that he held about necessary truth in the last chapter of the Psychology, I think that the passages I have just quoted from Pragmatism suggest that there he was moving away from the view advocated in his Psychology. In Pragmatism there is at least some tendency to maintain that the distinction between so-called a priori beliefs and a posteriori beliefs is not a sharp one (White, 1973, p. 210; see also pp. 204-212, 339).

The passages in the Pragmatism referred to by White include the following statement by James. In emphasizing the plastic nature of truth in general, James writes:

> But how plastic even the oldest truths nevertheless really are has been vividly shown in our day by the transformation of logical and mathematical ideas, a transformation which seems even to be invading physics. The ancient formulas are reinterpreted as special expressions of much wider principles, principles that our ancestors never got a glimpse of in their present shape and formulation (James, 1907/1913, p. 65).

This passage seems to confirm White's hypothesis that James was moving towards a holistic conception of truth, where even the ancient truths of logic and mathematics were subject to change. If these truths, usually considered immutable by James, were subject to change over time, they would then be subject to the same need for verification as any other set of human ideas, and the pragmatic method could be applied to them as it is applied to other modes of human experience. But the passage quoted immediately above from James' Pragmatism is not as explicit as his 1890 and 1904 statements, and when taken in conjunction with his earlier position regarding the immutability of the necessary truths, it must lead us to ask what it is about the necessary truths that changes over time. While James was admittedly beginning to explore an alternative to the "Lockeian dualism between immutable and contingent truth, as well as from the Kantian pluralism between a priori and a posteriori truth" (White, 1973, p. 210),he appears to

retreat back into the dualisms when he finds himself forced to make his position more explicit.

Following the same lines of dissection that were used in Chap. 4 to separate the necessary truths and ideal relations from scientific theories, we find that the necessary truths and ideal relations must be treated separately from the larger system of thought in which they are embedded. James does not say that the ancient formulas themselves are subject to change, but rather that they are "reinterpreted as special expressions of much wider principles" (James, 1907/1913, p. 65). These 'ancient formulas' correspond to the 'necessary truths' of the Principles and they constitute a separate and definable 'sub-world' of their own which is distinguishable from the larger theories or systems where they are utilized. The systems of logic and mathematics change over time so that the necessary truths yield new meanings and 'results' as consequences of the transformation of the systems. And the systems themselves are slow to change, according to James, because they are so deeply entrenched in our basic belief structures. These considerations make it difficult to separate the 'eternal facts' from the 'mutable' constructs within any given logical or mathematical system (see James, 1907/1913, p. 65). But James did make the separation in the Principles and he reinstates his distinction in the Pragmatism. The 'eternal' components of the systems are described by James as purely mental ideas and the relations between them. These facts are self-authenticating, and no sensory verification is necessary.

> But matters of fact are not our only stock in trade. Relations among purely mental ideas form another sphere where true and false beliefs obtain, and here the beliefs are absolute, or unconditional. When they are true they bear the name either of definitions or of principles, ...The objects here are mental objects. Their relations are perceptually obvious at a glance, and no sense-verification is necessary. Moreover, once true, always true, of those same mental objects. Truth here has an 'eternal' character. ...It is but a case of ascertaining the

> kind, and then applying the law of its kind to the particular object. You are sure to get the truth if you can but name the kind rightly, for your mental relations hold good of everything of that kind without exception. If you then, nevertheless, failed to get truth concretely, you would say that you had classed your real objects wrongly (James, 1907/1913, pp. 209-210).

Ayer writes: "the truth of necessary propositions is wholly dependent upon the conventions which govern the use of the signs by which they are expressed" (Ayer, 1968, p. 205). Ayer's interpretation of James' position appears, initially, to be too postivistic and too 'sophisticated' to accurately describe James' position regarding the necessary truths. Ayer regards James' position as a somewhat simplistic approximation of modern theory regarding the status of the ideal relations (see Ayer, 1968, pp. 205-206). He therefore demonstrates that James' major weakness lies in over-simplifying "the distinction between relations of ideas and matters of fact" (Ayer, 1968, p. 206). To this end, he points out the Kantian influences on James' theory but stresses that James 'corrects' for Kantian 'Absolutism' by allowing experience a potential effect upon the network of ideal relations. That is, the ideal network could be altered by "a radical alteration in the character of the realities with which we were confronted" (Ayer, 1968, p. 207). This is logical enough. The problem is to determine <u>what</u> would thereby be altered in the ideal network.

James writes:

> The hundredth decimal of π, the ratio of the circumference to its diameter, is predetermined ideally now, tho no one may have computed it. If we should ever need the figure in our dealings with an actual circle we should need to have it given rightly, calculated by the usual rules; for it is the same kind of truth that those rules elsewhere calculate (James, 1907/1913, p. 211).

Our concern now is to determine what the 'status' of the usual rules is. That the value of the hundredth decimal of π is predetermined by the rules is not a problematic statement; the problem comes in

deciding whether or not James would allow that the application of the same rules could give different values of π depending on whether π was being calculated in, say, Euclidean or non-Euclidean space. In all cases, the value of the hundredth decimal of π is predetermined by the system, but the choice of the system is dependent on the conventions of science and logic as Ayer describes them. James does in fact allow that mathematical and logical conventions are subject to change (see James, 1907/1913, p. 65, quoted above, p. 508), so that his position is not incompatible with Ayer's analysis. At the same time, James fails to develop the implications of his theory to show specifically that while application of the rules must be the same in all cases, where, to follow the example, the value of the hundredth decimal of π is sought, the particular integer that results from the calculations is dependent upon the 'larger' concepts of space and time wherein the rules are applied.

James gives the necessary truths an analogous structure to sensory objects. The mental relations are as 'fixed' in their properties as sensible objects are and we cannot deny the 'realness' of these properties. James writes:

> Our ready-made ideal framework for all sorts of possible objects follows from the very structure of our thinking. We can no more play fast and loose with these abstract relations than we can do so with our sense-experiences. They coerce us; we must treat them consistently, whether or not we like the results. The rules of addition apply to our debts as rigorously as our assets (James, 1907/1913, p. 211).

Not only are the ideal relations 'fixed' in their properties but they have direct consequences for our relationship with the sensible world. The mind is coerced by the ideal relations and the sensible objects, and by the 'products' of their interaction so that:

> Between the coercions of the sensible order and those of the ideal order, our mind is thus wedged tightly. Our ideas

> must agree with realities, be such realities concrete or abstract, be they facts or be they principles, under penalty of endless inconsistency and frustration (James, 1907/1913, p. 211).

Our ideas about the sensible world must agree with our experiences of sensible reality; this is what the whole process of verification is about. And our ideas of abstract realities must agree with those realities too, but here the meaning of 'agreement' is somewhat different. We cannot fail to get the truth, according to James, if we apply the correct operations to the intellectual data at hand. The propositions are self-verifying and the 'answers' are absolute and pre-determined. This is the difference between appeals to an eternal system of 'facts' and appeals to potential experience in the sensible world where the objects and their relationships are subjected to temporal changes. In the world of ideal relations, truth is not made, it is, so that the derivation of any abstract truth always follows the same eternal rules. On the other hand, the abstract truths can only be selectively applied to the concrete world. In the Principles James explicitly shows that mathematics and logic do not have "anything to say about facts, about what is or is not in the world" (James, 1890, 2, p. 650). Nature is plastic and thus provides instances where abstract truths do describe the data; at the same time, she provides as many instances where they do not. Science can therefore be defined as the attempt to 'fit' abstract truth and nature together. The 'rationalization' of the sensible world is a product of the interaction of the ideal relations given in the context of scientific theory, and the sensible world (see James, 1907/1913, p. 225). Furthermore the ideal world and the sensible world each contain more 'facts' or 'objects' than are united together in empirical science. The mind is tightly wedged between the two sub-worlds with the result that the rationalization of the

sensible world is controlled by constraints in both sub-worlds (see James, 1907/1913, p. 217; see also James, 1890, 2, pp. 647, 665, 667-669, 671).

What, then, is the relationship between the pragmatic theory of truth and the ideal relations? So far it has been shown that James believed that the ideal relations were immutable and eternal, in contrast to the systems in which they are found. Thus, they are indisputable 'facts'. Because James declared that the ideal relations are 'real' and eternal objects, the pragmatic method of truth is not applicable to the ideal relations themselves. Lovejoy writes that James presented his "doctrine with an apparent exception in favour of 'necessary truths'" (Lovejoy, 1963, pp. 10-11). Lovejoy adds that this is not an exclusive exception because truth consists in the correspondence of the ideas with experience. This is valid enough as far as it goes, but Lovejoy, like James, fails to look at all of the epistemological consequences of having 'immutable' constituents buried in mutable systems. In the case of the necessary truths, truth is not made; it already exists awaiting discovery. The consequences are pre-determined in the sense that the right or wrong answer pre-exists; it awaits discovery. True ideas can be verified but they do not <u>become</u> true. The personal acquisition of the ideal relations extends the individual's potential for verifying other aspects of experience; and insofar as the ideal relations are related to other aspects of experience, the sum total of experience is increased so that the potential mutability of the universe is increased. But apart from their relationship to other aspects of experience the verifications within the system of abstract truth do not add to a growing body of truth for these verifications in themselves are self-authenticating.

The major problem with the relationship between the ideal relations

and the pragmatic method lies in James' failure to make it explicit that the ideal truths give different results depending upon the framework or 'system' in which they are embedded. In the Principles he wrote:

> The axiom about figures being movable in space is rather a postulate than an axiom. So far as they are so movable, then certain fixed equalities and differences obtain between forms, no matter where placed. But if the translation through space warped or magnified forms, then the relations of equality, etc., would always have to be expressed with a position-qualification added. A geometry as absolutely certain as ours could be invented on the supposition of such a space, if the laws of its warping and deformation were fixed. It would, however, be much more complicated than our geometry, which makes the simplest possible supposition; and finds, luckily enough, that it is the supposition with which the space of our experience seems to agree (James, 1890, 2, p. 658).

James does not assume here that the same axioms could be utilized within the 'new' space. Instead, he repeats his contention that we are 'fortunate' that our 'experience' of space coincides with the ideal relations. Had he recognized that the value of the ideal relations is a function of the particular mathematical/logical system, his pragmatic theory of truth would have had wider implications for the selection of scientific, mathematical and logical theories and he would have avoided the problems of rationalism that plagued him.

Had James developed a relativistic system like the one just outlined, the pragmatic method could have been applied to the discovery of the properties of the necessary truths within any proposed system. Instead, James continued to try to show than an ontological status could be granted to abstract ideas analogous to that granted to physical objects. White comments:

> The main continuity arises from the fact that both books contain a distinction between beliefs that purport to copy something and beliefs that do not, although different kinds of beliefs are called copy-beliefs in the different books. In the Psychology the typical example of a copy-belief is a generalization like fire burns, water wets, or glass refracts; whereas in Pragmatism James speaks of less general beliefs about sensible objects and of beliefs about

> concepts as copying realities. He says that if you shut your eyes and think of a clock on the wall, you may form a belief which copies something about its dial. He also speaks of the conceptual belief that 2+2=4 as a copy-belief. Furthermore, he speaks in Pragmatism of all copy-beliefs as being "coerced". One therefore gets the impression that we are forced by reality to hold certain beliefs whereas we have a certain kind of freedom to accept or not to accept others (White, 1973, pp. 202-203).

The problem is to determine how the 'coerced' beliefs can be equated with one another, in opposition to the 'uncoerced beliefs'. It is difficult to see how 2 + 2 = 4 is a copy belief for James makes it explicit in the Principles that mathematical relations are imposed on nature by the mind. If the proposition that 2 + 2 = 4 is to be found in nature at all, it is found in the midst of other phenomena which at times would seem to indicate that 2 + 2 = 1 (see James, 1890, 2, p. 653). 2 + 2 = 4 is only self-verifying in the world of ideal relations, and if it is to be regarded as a copy-belief at all, it can only be regarded as copying itself; it cannot reliably copy anything in the physical world.

The apparent inconsistency between the Pragmatism and the Principles is intensified when we come to James' contention that necessary relations are implicit in sensible phenomena themselves. He argues that the seven stars which make up the Great Bear constellation are implicitly bear-like in the pattern they present (see James, 1904/1909a, pp. 92-93):

> Are we to say that these stars were 'explicitly seven, explicitly bear-like, before the human witness came'? His answer is: not explicitly, because there is no subject here for truth or falsehood until the question of the number and appearance of the stars is actually raised. Implicitly, because once the question of the number and appearance of the stars is actually raised, 'the stars themselves dictate the result'. The fact can therefore be said to 'pre-exist virtually' in the sense that if ever the question of its existence were to be raised, it would determine the answer (Ayer, 1968, p. 204).

The perception of the stars in this pattern is dependent on a sentient human observer. The stars, like the rest of nature, 'yield'

up their particular relations only in the presence of a selective consciousness. That there are specifiable additive relations in nature, that the stars conform to certain visual configurations, depends totally on the presence of a human mind that perceives the relations. Nature is as at home with the additive relation wherein 2 + 2 = 1 as it is with the relation 2 + 2 = 4. Similarly, the fact that the constellation looks like a bear is irrelevant to the movements of the stars themselves and their relations to one another. Holmes' criticism is relevant here (see Holmes, quoted in Perry, 1935/1974, 2, p. 457, quoted above, p. 469). In placing the human intellect at the centre of the universe, James makes the error of confusing the 'real' relationships between natural events with the ability of the human mind to impose its own order on natural events. This does not mean that these imposed relationships are not 'real' or 'valid' in human terms; it does mean that questions about how the physical world actually functions are made more difficult to answer by James' confounding of those patterns which are obviously imposed on natural phenomena by man, those which appear to result from the interaction between mind and nature, and those which coerce the mind.

Finally, the existence of the abstract truths depends upon the human intellect. They too, must be discovered, as any other relations or objects must be discovered so that we must feel our way through the morass of abstract truths as we do through any mode of experience open to us. As White shows, James did make the distinction between necessary and contingent truths, although as we have already shown, he tends to confound the distinction at times in both the Principles and the Pragmatism. This means, however, that in coming to terms with experience per se, we appeal to two sets of coercive objects. Experience in the sensible world is necessary to provide the 'objects'

which the necessary truths describe, but it is not necessary to consult the world of experience to determine many of the properties of, or relations between, these objects. They are 'given' in the meaning of the terms themselves. White makes this clear:

> In agreeing with Locke, James maintained that the truths of logic and mathematics are necessary and immutable, and that they are seen to be true merely by examining what James called "ideal conceptions". We compare these ideal conceptions and on the basis of that comparison arrive at beliefs such as those that comprise logic and mathematics. For this reason James maintains that "the pure sciences" establish their truths as ordinary men establish the truth that no white thing is black. Here he is obviously and avowedly Lockeian in his view, maintaining that "to learn whether black and white differ, I need not consult the world of experience at all; the mere ideas suffice. What I mean by black differs from what I mean by white, whether such colors exist extra mentem meam or not. If they ever do exist, they will differ. White things may blacken, but the black of them will differ from the white of them, so long as I mean anything definite by these three words". James then goes on to say, in effect that the logical statement that if Socrates is a man and every man is mortal, then Socrates is mortal, is true on the basis of "our insight into the very meaning of the word is" (there is no mention of insight into the meaning of "every" and "and"). Similarly, he holds that arithmetical beliefs like the belief that 2+2=4 are established merely on the basis of our insight into the meaning of numerical expressions (White, 1973, pp. 175-176; internal quotations from James, 1890, 2, pp. 643-644, 649).

And now at last we come to the real crux of the matter. White states that according to James, the necessary truths arose as accidental variations in the minds of our remoter ancestors, survived because they were useful, and were passed on as 'heritable variations' (see White, 1973, p. 175; see also James, 1890, 2, pp. 627, 631). And as human variations they should be testable within the pragmatic method. The real difficulty here lies in the fact that while James insists that the necessary truths have evolved in human consciousness, he also implies that they transcend their human origins. James does not treat the abstract truths as testable variations--instead, he gives them an absolute status and then uses them to lead us into new relationships with the world on the basis of their absolute status:

> In this realm of mental relations, truth again is an affair of leading. We relate one abstract idea with another, framing in the end great systems of logical and mathematical truth, under the respective terms of which the sensible facts of experience eventually arrange themselves, so that our eternal truths hold good of realities too. ...Our ready-made ideal framework for all sorts of possible objects follows from the very structure of our thinking (James, 1907/1913, pp. 210-211).

We must conclude that while James ascribes an empirical origin to the necessary truths (see Ayer, 1968, p. 206; White, 1973, p. 175; and James, 1890, 2, pp. 627, 631), he does not treat them in the same way as he treats the other kinds of truth. For James, the necessary truths transcend their origins, and exist as facts while other kinds of truth do not. The pragmatic method is not applied to the necessary truths themselves, although James does apply it meaningfully to the conjunction of necessary truths and the sensible facts of experience, for this conjunction is the essential basis of science. The pragmatic theory of truth must now be discussed in relation to 'science' as it emerges from the marriage of abstract truths and experience.

The World of Science

In the analysis of the necessary truths and ideal relations, it was demonstrated that James' pragmatism continued to be plagued by problems of rationalism in regard to the values that could be assigned to the necessary truths. Thus he postulated that π had an eternal and fixed value, so that the necessary truths are not governed by the temporal and mutable properties of the rest of the evolving universe. They stand as eternal facts, and their status has not altered since the 1890 account in the Principles. But James has made significant changes regarding the status and discovery of scientific objects. We demonstrated in Chap. 4 that James' account of science was limited by his adherence to the mathematical/mechanical model of Newtonian

science. By the time he was in the process of constructing his pragmatic method of truth, he had moved away from a rigid adherence to the Newtonian model, and was beginning to incorporate the concepts of temporalism and mutability into his analysis of scientific progress. Thus, he is moving away from the progressive view of history that dominated the Principles, and into a more relativistic and evolutionary account of science.

The static, progressive view of science developed in the Principles clashed with James' theory of consciousness, which was structured in evolutionary terms. While consciousness was mutable, temporal, and subject to the effects of spontaneous variation, the underpinnings of the physical world were described in rigid mechanical terms. The function of consciousness (in regard to science), was therefore limited to the discovery of the eternal laws which governed the physical world. Moreover, James' tendency to confound necessary truths and scientific theories led him into a rationalist trap, so that he intimated that as the rationalization of the world proceeded, sensory verification would eventually become irrelevant in determining the sensible effects of the motion of atoms (see James, 1890, 2, pp. 665-669; see also Chap. 4, pp. 261-277).

By 1906[17] James' conception of science had undergone a significant development. He writes that:

> When the first mathematical, logical and natural uniformities, the first laws, were discovered, men were so carried away by

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17. The lectures which make up James' Pragmatism were first delivered at the Lowell Institute in Boston in 1906; they were repeated at Columbia University in 1907, and published in that same year as the Pragmatism. The only exception was the third lecture, "Some metaphysical problems pragmatically considered" which is an expansion of James' 1904 paper, "The pragmatic method" which first appeared in the Journal of philosophy, psychology, and scientific methods, 1904, 1, pp. 673-687.

> the clearness, beauty and simplification that resulted, that they believed themselves to have discovered authentically the eternal thoughts of the Almighty(James, 1907/1913, p. 56).

This statement in fact reflects his own exultant thinking in 1890. He now argues that scientific laws do not have this absolute status; like sensible phenomena and human consciousness itself they are both temporal and mutable:

> But as the sciences have developed further, the notion has gained ground that most, perhaps all, of our laws are only approximations. The laws themselves, moreover, have grown so numerous that there is no counting them, and so many rival formulations are proposed in all the branches of science that investigators have become accustomed to the notion that no theory is absolutely a transcript of reality, but that any one of them may from some point of view be useful. Their great use is to summarize old facts and to lead to new ones. They are only a man-made language, a conceptual shorthand, as some one calls them, in which we write our reports of nature; and languages, as is well known, tolerate much choice of expression and many dialects.
>
> Thus human arbitrariness has driven divine necessity from scientific logic (James, 1907/1913, p. 57).

Scientific theories therefore reflect the variety and mutability of human thought.

The measure of James' progress in bringing scientific activity into line with his theory of consciousness is most obvious in the revised status of atoms. He no longer insists that the sensible world is <u>really</u> constituted out of atoms and their movements to and fro, but argues that it is only through 'agreement' that scientific theories can be applied to the sensible world. "Any idea", writes James:

> that helps us to <u>deal</u>, whether practically or intellectually, with either the reality or its belongings, that doesn't entangle our progress in frustration, that <u>fits</u>, in fact, and adapts our life to the reality's whole setting, will agree sufficiently to meet the requirement. It will hold true of that reality (James, 1907/1913, p. 213).

Scientific theories, with their genesis in the world of ideal relations and necessary truth, often conflict with sensible experience, or common sense, and it is only through 'agreement' that scientific

theories can be applied to the sensible world. 'Agreement' describes the process wherein ideas lead us into useful conceptual areas, and useful sensory resting-places. 'Agreement' obtains between two otherwise diverse sub-worlds when the ideas from one world can be usefully applied to another. Thus in the case of science:

> It is only thus that 'scientific' ideas, flying as they do beyond common sense, can be said to agree with their realities. It is, as I have already said, as if reality were made of ether, atoms, or electrons, but we mustn't think so literally. The term 'energy' doesn't even pretend to stand for anything 'objective'. It is only a way of measuring the surface of phenomena so as to string their changes on a simple formula (James, 1907/1913, p. 216).

Conceptions of ether, atoms, electrons, and energy add to human experience because they facilitate the rationalization of the sensible world. But they do not facilitate its rationalization in any absolute sense: instead, they allow the thinker to impose order on the flux of phenomenal appearances. There is no 'guarantee' given in this statement that sensible objects are really made up of atoms in motion. But because scientific theories cannot be verified in any absolute sense, scientific activity does not become any less rigorous. Scientific truths must conform to the demands of the sub-worlds of ideal relations and necessary truths, and to sensory experience. The 'squeeze' between abstract truth and concrete experience is intense; furthermore, the whole stock of opinions is brought to bear in determining which theory will be accepted and which will be rejected:

> Yet in the choice of these man-made formulas we can not be capricious with impunity any more than we can be capricious on the common-sense practical level. We must find a theory that will work; and that means something extremely difficult; for our theory must mediate between all previous truths and certain new experiences. It must derange common sense and previous belief as little as possible, and it must lead to some sensible terminus or other that can be verified exactly. To 'work' means both these things; and the squeeze is so tight that there is little loose play for any hypothesis. Our theories are wedged and controlled as nothing else is. Yet sometimes alternative theoretic formulas are equally compatible

> with all the truths we know, and then we choose between them for subjective reasons. ...Truth in science is what gives us the maximum possible sum of satisfactions, taste included, but consistency both with previous truth and with novel fact is always the most imperious claimant (James, 1907/1913, p. 217).

Several points emerge in this statement. First of all, the pattern of scientific activity has not changed from the pattern described in the Principles. The search for scientific truths still consists of the attempt to discover sensible correlates for abstract theories. But the meaning of truth in regard to scientific objects has undergone a substantial change since 1890. When sensible correlates are discovered for abstract scientific hypotheses, the hypotheses are said to be true. But they are not true in any absolute sense. What is taken as 'true' in the pragmatism is that there is a correspondence between the idea and the sensible object. When this correspondence is discovered, the theory is said to 'work'; that is, it satisfies our demands for a link between previously accumulated knowledge and the new experience.

The appearance of the sensible object in the place predicted by the theory is a fact because the reality of the sensible object and its relations cannot be denied. Moreover, the absolute truth of the ideal relations and necessary truths cannot be denied so that the self-verifying mathematical objects which are embedded in the scientific theory are also real facts. James makes it clear that facts are neither true nor false; they simply exist: "Truths emerge from facts; but they dip forward into facts again and add to them; which facts again create or reveal new truth...and so on indefinitely" (James, 1907/1913, p. 225). That truth and fact are not synonymous is further revealed in James' insistence that we can choose one theory over another to be 'true' when both explain all the 'facts' equally well (see James, 1907/1913, p. 217; quoted immediately above). The foundations

of the more relativistic pragmatic view of science are of course contained in the Principles: James made it clear that scientific objects were believable because they were generated as intermediary truths between two sets of 'facts'. But he failed to make an explicit distinction between the temporal, mutable nature of scientific 'truth-seeking' per se and the genesis of science in the worlds of sensible experience and necessary truth. He argued that scientific progress was cumulative, and implicitly ratified this conclusion when he confounded the necessary truths with the theories wherein they were embedded.

James has made substantial advances in constructing a relativistic theory of scientific progress but he is wary of extending the license for individual decisions as to what constitutes a scientific truth too far. To this end, he makes it clear that scientific activity is rigidly constrained by the sensible world, by necessary truth, and by the whole stock of accumulated truths and opinions (see James, 1907/1913, pp. 60-63, 217). This is particularly necessary because the function of science is to "summarize old facts and to lead to new ones" (James, 1907/1913, p. 57). The subjective role of consciousness in the rationalization of the world is critical:

> A new opinion counts as 'true' just in proportion as it gratifies the individual's desire to assimilate the novel in his experience to his beliefs in stock. It must both lean on old truth and grasp new fact; and its success (as I said a moment ago) in doing this, is a matter for the individual's appreciation. When old truth grows, then, by new truth's addition, it is for subjective reasons (James, 1907/1913, p. 63).

In the temporal, mutable, evolving universe, the generation of truth is the responsibility of each individual; at the same time, truth accumulates 'for subjective reasons':

> We say this theory solves it on the whole more satisfactorily than that theory; but that means more satisfactorily to

> ourselves, and individuals will emphasize their points of satisfaction differently. To a certain degree, therefore, everything here is plastic (James, 1907/1913, p. 61).

Because everything here is plastic, the truths that man creates have implications for the evolution of the universe. James warns us that beliefs must correlate with the sensible world: "Woe to him whose beliefs play fast and loose with the order which realities follow in his experience; they will lead him nowhere or else make false connexions" (James, 1907/1913, p. 205). It is impossible to discuss James' theory of truth in relation to science while ignoring the broad functional implications of pragmatism. Truth is not simply related to the correlation between ideas and sensible objects; it has to have some intrinsic 'value' for the individual as well: truth is:

> essentially bound up with the way in which one moment in our experience may lead us towards other moments which it will be worth while to have been led to. Primarily, and on the common-sense level, the truth of a state of mind means this function of a leading that is worth while (James, 1907/1913, p. 205).

The value of any truth is thus calculated in terms of its usefulness for the believer (see James, 1907/1913, p. 204). And because the evolution of the universe depends on individuals creating new truths, these truths have real, practical consequences.

James writes that the human hope is always for an absolute type of truth which will tie the whole world together, even if it appears unlikely that this hope will ever be realized:

> The 'absolutely' true, meaning what no farther experience will ever alter, is that ideal vanishing-point towards which we imagine that all our temporary truths will some day converge. It runs on all fours with the perfectly wise man, and with the absolutely complete experience; and, if these ideals are ever realized, they will all be realized together (James, 1907/1913, pp. 222-223).

It is therefore interesting to speculate, in light of James' hopes for a unified, predictive science and an ethically rationalized

cosmos, that the methods of pragmatism are, finally, only steps along the way towards an ultimately unified epistemology: "Like the half-truths, the absolute truth will have to be made, made as a relation incidental to the growth of a mass of verification experience to which the half-true ideas are all along contributing their quota" (James, 1907/1913, p. 224). This interpretation of James' aims would be compatible with his pluralistic world-view and his 'voluntarist' account of consciousness. As Marcell writes:

> Since, from the point of view of James's psychology, human will and purpose played such a dominant role in the construction of ideas in the first place, the validity of the pragmatic criteria of their verification implied a great deal more than a simple epistemological device for estimating an idea's validity. Pragmatism suggested that in a pluralistic, additive world in which novelty was real and the will truly creative, history, as men experienced it, was by nature voluntaristic. When James proclaimed that the value of an idea was to be judged by how effectively it served to "carry us prosperously from one part of our experience to any other part, linking things satisfactorily, working securely, simplifying, saving labor", he revealed how pragmatism assumed and built upon a particular philosophy of history (Marcell, 1974, p. 187).

The creation of truth is an ambulatory process: its generation depends on the specific consequences that holding any belief has for the individual. It looks towards the future: it is cumulative and progressive (see James, 1907/1913, pp. 122-123, 205, 218, 224-225, 257). Although James insists that scientific truth is subject to the processes of temporalism and mutability, he still looks towards the possibility of a science which provides ultimate truths about the universe because the mind is so tightly wedged between the various levels of experience. Marcell makes this point in regard to morality but it can equally well be applied to James' theory of scientific progress:

> But James's pragmatic pluralism too had a logic, and while it denied the coercive fatalism of rationalism's block universe, it also had to show that there was sufficient

> continuity in the universe for human thought and action to proceed effectively and meaningfully from one object and point in time to another. If morality could be real only in a universe of chance and choice, it could similarly be real only in a universe in which there was a certain amount or quality of continuity in experience. While accepting empiricism's external multiplicity, James had to show that Wright's nihilistic, morally naked universe was inadequate to the larger demands of experienced reality (Marcell, 1974, p. 185).

Marcell goes on to show that James' objection to the empiricism of Wright and the associationists lay in their insufficient attention to the fact that experience was not made up of discontinuous and unrelated events, and their failure to see that percepts and concepts were always inextricably related in consciousness (see Marcell, 1974, pp. 185-186). This illuminates James' view of science because it recalls his insistence that man's consciousness is the 'glue' which holds things together in the shifting, temporal universe.

Finally, James' pragmatic view of science is compatible with White's insistence that James is moving towards a holistic epistemology, and away from the trialism of the Principles. Scientific theories work only when they integrate the whole stock of previous truths with new experiences. At the same time, James' attempts at constructing a holistic approach to human knowledge place certain constraints on the construction of an independently temporal, mutable model of science. As James shows in his example re the discovery of radium, the 'acceptable' explanation of the phenomenon was the explanation which coincided with the principles concerning the conservation of matter and energy (see James, 1907/1913, pp. 62-63, quoted above p. 499). Discoveries are made in the context of existing theory and 'opinion', and anomalous discoveries are integrated into existing theory with as little disruption to the theory as possible. He still regards scientific progress as largely cumulative, so that his 'holistic' account of experience includes the whole stock of human experience

and opinion. At the same time, James recognizes that scientific theories are discarded when "human experience boils over those limits" (James, 1907/1913, p. 223), so that the 'limits' of a scientific theory are casual, not absolute (see James, 1907/1913, p. 223). What satisfies the demand for truth in one era will no longer satisfy its demands in the next. James emphasizes the relative, mutable nature of the 'truths' of science. And he emphasizes the consequences of scientific truths in relation to the future of science itself and the future of concrete reality (see James, 1907/1913, pp. 186-187). But his failure to overcome the problems of rationalism in regard to the necessary truths, and his seeming reluctance to rank science with ethics and metaphysics in the reconstruction of the world-view prevented him from developing all of the implications of his revised, evolutionary view of scientific progress.

Metaphysics and Ethics

The heart of James' pragmatic theory of truth lies in its application to moral, metaphysical, and religious questions. "The pragmatic method is primarily a method of settling metaphysical disputes that otherwise might be interminable" (James, 1907/1913, p. 45). James claims that the pragmatic method solves these disputes by looking at the consequences of holding either position; if there is no potential difference in the consequences of accepting either position, 'practically speaking', the theories are the same. If different consequences would accrue, then a 'real' basis for choosing one position over the other exists and a real choice can be made. But he also insists that the pragmatic method can be used for arriving at 'true' beliefs (see Thayer, 1968, p. 135). James argued that metaphysical, moral, and religious hypotheses were

not only psychologically believable (and thus 'true' for the individual), but that these could be made true when the individual acted in accordance with his beliefs. He could make this argument because he correlated truth with consequences, and because he translated the meaning of metaphysical statements to correspond with practical consequences in the world (see James, 1907/1913, pp. 45-50, 85-122). The individual therefore had to perform three basic operations: he had to evaluate metaphysical and ethical hypotheses in terms of their meanings or potential consequences for action, and he had to select hypotheses to be true for himself on the basis of their potential consequences. He then had to put the selected belief into operation, so that its truth would no longer be a matter of faith, but would be verified or falsified by felt consequences or afferent sensations.

James' pragmatic theory of ethics and metaphysics is much more closely tied to his psychology than is his theory of science. We have already shown that James' psychological theories of reality and volition were constructed so that the possibilities for indeterminism and free will were maximized. The pragmatic theory of truth thus has its roots in the 'active' function of belief and in volition with effort. The discussion of volition with effort emphasized that ethical and metaphysical ideas had to eventually be discharged as muscular movements: changes in the sensible world could only be mediated through the translation of anti-impulsive ideas into impulsive ideas--that is, ideas with immediate implications for action. This translation process effectively means that abstract universals must be transformed into ideas about particulars in order to determine their 'meanings'for the individual. James' pragmatic theory of truth is therefore largely concerned with the construction of a method for ensuring that ethical and metaphysical ideas can be evaluated in terms of their possible consequences

or 'values' for the individual and for the universe:

> It is astonishing to see how many philosophical disputes collapse into insignificance the moment you subject them to this simple test of tracing a concrete consequence. There can be no difference anywhere that doesn't make a difference elsewhere--no difference in abstract truth that doesn't express itself in a difference in concrete fact and in conduct consequent upon that fact, imposed on somebody, somehow, somewhere, and somewhen. The whole function of philosophy ought to be to find out what definite difference it will make to you and me, at definite instants of our life, if this world-formula or that world-formula be the true one (James, 1907/1913, pp. 49-50).

'True' beliefs, religious or otherwise, serve the purpose of making the individual 'feel' better about life; more importantly, they impel him to take particular actions that he might not perform if he believed in different postulates. This is James' rationale for claiming that God's "services are needed in the dust of our human trials" (James, 1907/1913, p. 72). James' pragmatic notion of God was specifically devised to meet the emotional and ethical demands for a religion which would be compatible with evolutionary doctrine. Evolutionary theory had been correlated with materialism and atheism; James countered the materialist arguments by transforming biological evolutionary postulates into theological, ethical, and metaphysical systems. But his theory of truth is a strange mixture of logic and polemic for he was simultaneously attempting to construct a new theory of truth and to justify his personal religious and ethical conclusions. James emphasized that the comfort afforded by certain beliefs justifies their existence and the Varieties affords many examples of his pluralism and tolerance in this regard. But James is not exactly true to his pluralism when he looks at the consequences of holding certain ethical and metaphysical positions. He wrote: "The true is the name of whatever proves itself to be good in the way of belief, and good too, for definite assignable reasons" (James, 1907/1913, p. 76). He then quickly went on to develop his meaning of 'good' in relation to 'true', stating that:

> If there be any life that it is really better we should lead, and if there be any idea which, if believed in, would help us to lead that life, then it would be really better for us to believe in that idea, unless, indeed, belief in it incidentally clashed with other greater vital benefits (James, 1907/1913, p. 76).

This statement gives us the key to understanding the limits of James' pluralism as it applied to the choice of beliefs, for now James goes on to use the pragmatic method to specifically demonstrate the concrete advantages of choosing certain beliefs, and discarding others:

> He was interested in the import of metaphysical and theological "world formulae" in the life of the individual. If these formulae are not merely verbal, they must have effects on the practice of those who uphold them, and James insisted that such effects could be traced. The belief that a seeing force and not a blind one governs the universe creates optimism, and thus confidence in the future is the effective pragmatic meaning of the terms "cosmic design" and "divine creator". Whereas Peirce had construed practical consequences to be those which are experimentally and publically determinable for the community, James interpreted "practical" to mean the particular import that a belief has in the life of the individual (Ezorsky, 1967, p. 427).

An ethical or metaphysical idea can be accepted as true if it potentially has concrete consequences for the individual. Metaphysical axioms--for example, "nothing can happen without a cause" (James, 1890, 2, p. 611)--direct our search for sensible objects and relations which partially verify the belief. Psychologically, these sensible objects and relations serve as facts, and the idea is accepted as true. But the meaning of the potentially 'true' idea is changed when James aligns the 'truth' of its consequences with 'goodness'. 'Divine creator' pragmatically translated becomes 'confidence in the future'. The translation of meaning is crucial; it moves the discussion away from the creator as a being with particular attributes and towards one of the possible ethical effects of believing in him. It also moves the discussion away from ordinary verification procedures and into the realm of personal values. 'Good' has a potential double meaning here: an

idea is 'good' or 'true' when it leads to the discovery of sensible correlates. But it also seems to be 'good' or 'true' if James believes that it has a positive ethical value.

Whether James is justified in making these translations is debatable; Russell asserted that the terms do not have the same meaning, nor do they express the same propositions (see Russell, 1910/1966, pp. 124-126). Russell also criticizes James, because, he says, it is extremely difficult to predict the actual consequences of holding many beliefs. Russell uses the example of the idealistic beliefs that inspired the French Revolution to make his point. Believing in these doctrines had many consequences--some obviously good and some obviously bad. "It is almost impossible," says Russell, "to disentangle what the effects have been; and even if we could ascertain them, our judgment as to whether they have been good or bad would depend upon our political opinions" (Russell, 1910/1966, p. 119; see also p. 118). If the historical consequences of holding a belief cannot be determined, then it must be equally impossible to predict the consequences (or determine the meaning) of holding any given belief. It is therefore difficult to conclude that the belief is true because of the consequences that can be expected to ensue, or to accept partial sensible evidence as actually verifying the truth of the belief.

Lovejoy's point that a pragmatic epistemology needs be predictive of consequences is relevant here (see Lovejoy, 1963, p. 12), because, in light of Russell's criticism, the question arises as to whether pragmatism <u>can</u> be constructed as a predictive theory for all types of questions or whether its predictive 'value' must be limited to questions about the existence of sensible objects where there is a large sum of experience to 'back up' the prediction. James himself wrote that 'experience has a way of boiling over'.

John Dewey makes several cogent criticisms of James' theory in his article "What pragmatism means by practical". Dewey begins his argument with the statement that 'meaning' differs according to the type of object at stake. But as he shows, the function of meaning changes according to the nature of its objects, and Dewey is quite justified in demanding that James clarify the direction of the intended shift in meaning. Dewey writes:

> But "returning with it into experience we gain a more confiding outlook on the future. If not a blind force, but a seeing force, runs things, we may reasonably expect better issues. This vague confidence in the future is the sole pragmatic meaning at present discernable in the terms design and designer"....Now is this meaning intended to replace the meaning of a "seeing force which runs things"? Or is it intended to superadd a pragmatic value and validation to that concept of a seeing force? Or does it mean that, irrespective of the existence of any such object, a belief in it has that value? Strict pragmatism would seem to require the first interpretation (Dewey, 1916, p. 314).

Dewey's conclusion that 'true' pragmatism required the first 'translation' hypothesis is consistent with Russell's and leads Dewey to make a further criticism (again comparable with Russell's) regarding the consequences of ideas and their truth or falsity:

> But at other times any good which flows from acceptance of a belief is treated as if it were an evidence, insofar, of the truth of the idea. This holds particularly when theological notions are under consideration. Light would be thrown upon how Mr. James conceives this matter by statements on such points as these: if ideas terminate in good consequences, but yet the goodness of the consequences was no part of the intention of an idea, does the goodness have any verifying force? If the goodness of consequences arises from the context of the idea in belief rather than from the idea itself, does it have any verifying force? If an idea leads to consequences which are good in the one respect only of fulfilling the intent of the idea (as when one drinks a liquid to test the idea that it is a poison), does the badness of the consequences in every other respect detract from the verifying force of consequences (Dewey, 1916, pp. 319-320).[18]

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18. Russell's and Dewey's criticisms were applied to James' pragmatic theory as a whole and not simply in relation to ethical decisions and their meanings. Their comments seem, however, to have special relevance to ethical issues and have therefore been discussed in this section.

We would assume that the 'badness' of the consequences in this case does not detract from the 'truth' of the idea. But Dewey is quite right in pointing out that 'truth' cannot be equated with 'goodness'. The verification process in this sense is a testing process if we accept Russell's statement that the consequences of holding any ethical idea are unpredictable. Furthermore, once the idea has been 'verified' in the sensible world, the task of evaluating the results still awaits us as Dewey shows. The results can be examined from two perspectives: the intention of the idea can be assessed in determining whether 'goodness' was an intended part of the idea. If it was not, it is difficult to see how 'goodness' helps to verify the idea. The perception that the consequences were good would constitute an addition to the perception that the idea was true, the 'object' discovered. Similarly, if the consequences are bad, the idea itself may still be true: the liquid was poison. The consequences of any verified idea have future consequences for behaviour so that new intentions are formed on the basis that an idea is true and that it has positive or negative connotations.

In moral decisions the necessity of assessing the consequences of enacting any particular belief is particularly important, for ethical beliefs, by definition, do not have predetermined consequences--predetermined in the sense that the consequences are necessarily predictable according to empirically derived ideas about the physical world. The bottle contains poison or it does not; our physical constitution allows us to perform the action or it does not, and whereas we may be ignorant of the consequences in store for us, James' realism forced him to make the division between those actions where will is efficacious and those where it is not (see James, 1890, 2, p. 560). But ethical postulates do not have an a priori correspondence to particular objects,

and as Chap. 6 demonstrated, James took a nominalist stand and postulated that abstract conceptions must be translated into ideas about particulars. The drunkard must realize that drinking the particular glass of brandy makes him a drunkard. The theist must similarly find ways of translating his belief in God into an impulsive idea which can be verified, which can yield 'true' particulars.

Earlier we stated that the 'particular' truths discovered were used as partial ratifications for the abstract notion in consciousness. Therefore, the evaluation of consequences is particularly important. There are several steps in the over-all process of 'verifying' a metaphysical axiom or ethical postulate: first, the axiom or postulate must be translated into a particular idea which can be enacted in the world. Second, the results must be assessed for their truth or falsity; that is, particular consequences are predicted--or, to put it another way, particular afferent sensations are expected to result. If the predicted consequences ensue (the sensations are experienced), then the idea is true; if not, it is false. If true, then the individual must assess its relation to the abstract truth itself. This is the third step of the process and the one which troubles Russell, for the actions taken to 'make' ideas true often have diverse consequences and the 'goodness' or 'badness' of the belief is not unequivocal (see Russell, 1910/1966, p. 119). The pragmatist has the difficult task of selecting a mode of action which will not contradict the ideal belief itself, and he also has the equally difficult task of separating the true effects of his action from the whole range of consequences which might be related to it. Only then can he decide whether or not his original intention--his ideal--was verified in the sense of yielding the desired consequences.

This explains Russell's emphasis on the distinction that must be

made between criterion and meaning. He claims that "The arguments of the pragmatists are almost wholly directed to proving that utility is a criterion; that utility is the meaning of truth is then supposed to follow" (Russell, 1910/1966, p. 121). Russell demonstrates that a property A is only a criterion of a property B when "the same objects possess both" (Russell, 1910/1966, p. 120). Furthermore, property A is a useful criterion of B if it is easier to discover whether an object possesses property A than whether it possesses property B (see Russell, 1910/1966, p. 120). Russell shows that properties A and B may be the only intersecting properties the two objects share. In this case, the pragmatic equation between the two may lead the individual to treat the two objects or ideas as the 'same' when in fact important differences exist between them.

Dewey asserts that James' theory of truth was put forth as part of an 'anti-rationalist' crusade, so that his main objectives were to show that truth does not have an a priori status; instead, it is made. James also wished to show that truths are valuable because they are dynamic and practical rather than static (see Dewey, 1916, pp. 320-321). Dewey writes that "The special question of how truths are made is not particularly relevant to this anti-rationalist crusade" (Dewey, 1916, p. 321). This is unjustified: the satisfactory resolution of how truths are made is relevant to the outcome of James' battle with rationalism. But there are constructions in James' pre-pragmatist philosophy and psychology which seem to account for his apparent 'blindness' to some of the philosophical issues Dewey raises.

James emphasized that the meaning came from the practical import a belief has for the individual. Thus, the meaning of 'divine creator' could be optimism for one individual and pessimism for another, so that pragmatism is non-predictive. The pragmatic method can be applied to

determine the differences between two theories but the meanings that are abstracted and translated into practical or satisfying consequences are not predictable from the structure of the theories themselves. And this is where the will to believe becomes so important. The pragmatic meanings are not expressed within the terminology used in religious, metaphysical, or moral postulates.

These postulates have no obvious implications for particular actions, and when they are given the status of absolute truths, the kind of belief inspired may even be passive in nature. But if we ask as James does, what the consequences are of believing in one theory or another, then the perspective changes so that the emphasis is necessarily placed on the particular acts an individual performs in the light of his belief. The consequences are not predictable in any universal sense when the perspective shifts, but they can now be related to particular acts that the individual performs, for he is saying in effect "I believe and I will act in this way or that--I will act as if my belief were actually true and verified." The delineation of particular consequences leads to the affirmation of particular actions and these actions, in turn, have real consequences in the physical world.

The truth or falsity of the belief is thus equated with the performance of specific acts. Volition with effort, as opposed to ideo-motor action, is necessary for the performance of any action based upon metaphysical, moral or religious hypotheses, because, by definition, the required acts run counter to the 'instinctive history of the race'. Actions performed in this way require mental effort for there is nothing in the physical world per se to facilitate an unhesitating psychological fiat for their performance. They run counter to habit, counter to ordinary adjustment, and it is only through clearly willing their enactment that psychologically speaking, the individual can make them happen at all.

From a psychological point of view, James' translations of metaphysical, ethical, and religious ideas into ideas which have concrete consequences for the individual is the only means through which these ideas can have any real effect in the world. If they have no consequences for behaviour, they have no real consequences at all.

It must be emphasized that James did not intend his theory of truth to be loosely used in selecting the possible consequences of espousing one idea over another for its sheer expedient value (see Dewey, 1916, pp. 327-328; Thayer, 1968, pp. 152-153; Marcell, 1974, p. 155; and Perry, 1935/1974, 2, p. 210). The means for deciding metaphysical issues is based on the will to believe (see Thayer, 1968, p. 153), and the will to believe may only be exercised in cases where the option is living, forced, and momentous and where the proposition cannot be decided on intellectual grounds. Moral and metaphysical decisions are thus tightly wedged between sensible facts and scientific 'truths'. If a decision can be made on criteria other than faith, then it must be made according to those criteria. Further, decisions on faith must be compatible with the stock of existing truths gleaned from experience, from logical/mathematical systems, and from the empirical evidence of science. We are not free to believe whatever we want to believe, and we are not free to employ simple expediency as a criterion for accepting or rejecting any option.

James' theory of truth is a functional theory. As Thayer writes:

> In the case of truth, we are directed accordingly to consider how ideas affect the situation in which they occur with respect to the purposes and interests involved. But this is to observe and talk about performances, or operations of ideas in relation to all the other constituent conditions of a situation. Fundamentally, truth or falsehood (just as usefulness or uselessness) pertain to operations rather than to the things operating. Specifically, where our choices and purposes are clear, ideas, beliefs, or statements that operate effectively relative to those purposes are "true"; if ineffective or obstructive in operating to the same end, they are "false" (Thayer, 1968, p. 161).

As Thayer goes on to say, judgements of truth or falsity are relative to the situation, but once the operations are performed, though these operations differ, depending on the mode of experience involved, the truth or falsity of the judgements are as objective as is possible or desirable (see Thayer, 1968, p. 162). But what 'true' judgement means must be analysed. We must ask what it is that becomes true. When theism is accepted because of the optimism it brings into the world, and theism and optimism are equated in James' translation of terms into their consequences, what <u>becomes</u> true are the positive effects of optimism in the world. The metaphysical quandary as to the actual existence of God remains unsolved. What we are testing are the specific effects of believing in God in particular ways. James theorizes that belief in theism, in free will etc., may eventually add to the likelihood that these hypotheses are actually true (see James, 1902/1923, p. 519); he can go no further than this, and it is highly questionable whether or not he can go <u>this</u> far within the confines of the pragmatic theory of truth. And in his radical empiricism, he concludes that philosophers can only debate about those things which can be drawn from experience (see James, 1909, p. xii).

If we look at James' pragmatic theory of truth in relation to the criticisms made of it, we end up with two possible paradigms. As Thayer, and Dewey before him, have pointed out, James denies that there is a distinction between the process of verifying an idea as true and an idea itself as true. The process of verifying an idea is an active experience, where certain events and consequences are part of the experience, so that truth is equated with the <u>function</u> of the idea. This is quite different from knowing whether or not a statement <u>is</u> actually true. When metaphysical, moral, and religious hypotheses are tested, this obliteration of the distinction between the process of verification

and the truth or falsity of the idea itself becomes critical if we are concerned with establishing absolute truths in regard to these ideas. If we say that a metaphysical idea is true within the process of its verification and this process is connected with certain active ways of functioning within a situation, then the idea--for example, "God exists"--is 'true' as it operates in relation to the situation of the individual. But the idea is 'true' only within the verification process itself. The consequences of believing in any 'idea' and acting in accordance with the idea have traditionally been separated from the ultimate truth or falsity of the idea itself.

And this is the very distinction that James is trying to get rid of--that is, the joint Platonic and rationalist position that truth is independent of human agency. Had he accepted that the verification process and the 'truths' themselves could be distinguished he would, once again, have been led back to the old empiricist problem of the inability of the mind to know anything beyond itself. Instead, he tries to develop a theory of truth wherein the verification process is equated with truth because this allows him to build up a body of truth based upon man's concrete experiences. That is to say, he extends the range of potential experience for the individual so that moral and metaphysical ideas can now have real <u>effects</u> in the world. Truth in this sense must always be connected with an ongoing, verification process; it must be completely manufactured in the concrete world, for that world in itself does not contain any particular objects which correspond to the human ideals (see Brennan, 1961, p. 35). Truth as process in this sense is compatible with James' notion of a mutable, temporal world. Further, the fact that the consequences of selecting a particular metaphysic or religion are not predictable is consistent with James' emphasis on individualism, and James would have made his theory more

convincing had he tried to link the ultimate selectivity that exists in the metaphysical-ethical sphere of reality as he describes it in the Principles, with his indeterminist view of the universe and his notions of pluralism. Instead, his rather rigid definitions of 'meanings' and his strong injunctions as to which alternative yields the most 'good' are misleading, for James at times seems to be forcing a position as rigid and deterministic as the old Absolutism he personally and philosophically reacted against.

Conclusions

James summed up his theory of truth as follows:

> 'The true', to put it briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in the way of our behaving. Expedient in almost any fashion; and expedient in the long run and on the whole of the course; for what meets expediently all the experience in sight won't necessarily meet all farther experiences equally satisfactorily (James, 1907/1913, p. 222).

'Truth' is equated with correct or satisfactory ways of thinking, as 'right' is with satisfactory ways of behaving, for 'true' ideas and 'right' actions taken together 'pay' when they result in predicted afferent sensations. But 'true' ideas and 'right' ways of behaving are not verified or verifiable for all time because mind and world are contantly changing. The mind must continually accommodate itself to new conditions. Moreover, new ideas in the mind facilitate the discovery of new objects and relations in the world, and actions generated as a result of novel ideas produce real changes in the physical world. Finally, ideas have many ways of 'working' within the context of meeting the demands made on individuals by the various worlds of reality. Each world makes different 'demands' and the processes of validation vary as a function of the nature of the demands made by each mode of reality. James explicitly states that his theory of truth is unified

because it stresses that the consequences of ideas determine their meanings and because truth is made (see James, 1907/1913, p. 218; quoted above, p. 493). But beyond this, the meanings of truth vary according to the nature of the problem at hand, and this is why James claimed that more than one method of truth was necessary.

Both the methods of truth and the 'true' ideas that they generate have been shown to differ substantially as functions of the reality they are aimed towards. And this is consistent with James' claims for pragmatism. What does appear to be problematic is the finding that the 'beliefs', 'facts', or 'truths' gleaned from one level of experience are not directly 'translatable' into 'truths' appropriate to another level while James sometimes indicates that they are. This results because James does not properly distinguish between criteria and meaning and because the 'consequences' of ethical beliefs do not necessarily 'verify' the original postulate. All that they verify is the individual's belief in the postulate (See Russell, 1910/1966, p. 124).

White claims that James is moving towards a holistic methodology (see White, 1973, p. 202), but this statement is applicable only to the general way in which problems are approached (that is, the focus on the consequences), and to the final assimilation of new truths into the whole stock of opinions. It cannot be applied to the individual verification processes because the 'meaning' of what is verified in each reality is not consistent. 'Truths' have elements in common but they are not equivalent, and while this is consistent with James' insistence that there are many kinds of truth, it is still problematic because the meanings of the common elements change as a function of the type of truth that is being generated. The consequences of believing in the objects of the sensible world and the necessary truths are pre-determined. The objects of science occupy a halfway place between these two rigid worlds,

so that some of the consequences of believing in a theoretical postulate are predetermined; some are subject to change. This contrasts with the consequences of believing in metaphysical, aesthetic, and ethical postulates where the consequences verify the belief while not necessarily verifying the truth of the original postulate itself. Abstract ideas are therefore divided into two categories: the necessary truths transcend their 'human' origins to become absolutes awaiting discovery, while metaphysical, aesthetic, and ethical postulates of the same psychogenetic origin 'transcend' their origins in the absolute commitment given over to them by the believing individual, but are not self-verifying propositions, nor are the consequences of believing in them 'translatable' into verification of the postulates themselves.

The other common element--that truth is made--similarly has different meanings depending on the type of truth that is sought. At the structural level, the mind is a cohesive amalgam of the truths gleaned from the various sub-worlds so that 'truths' interact with one another, and the individual's motivation to perform this action rather than that stems from the whole collection of 'truths'. Concepts from one sub-world obviously interact to fund behaviour--the most outstanding example of this interaction being scientific discoveries. But there is nothing in James' pragmatism to suggest that the 'holism' goes beyond this interaction and much to suggest that the separations between sub-worlds are maintained.

Pragmatism and the Principles.

The Pragmatism provides a valuable extension for James' psychology, whatever its failings, for it shows how James intended the mind to actually function in the world--how he intended consciousness to relate to the demands of the various sub-world. Furthermore, there are the

beginnings of a psychological holism as White points out, in the emphasis on consequences and the 'whole stock of opinions'. The pragmatic writings show, more clearly than the psychology, how tightly the mind is wedged between its various 'real worlds'.

These real worlds can be depicted as a psychological network which acts to limit credulity so that the full stream of consciousness acts as a selective mechanism for the acceptance or rejection of incoming or internally generated information as potentially true or false. The openings for free will are narrow and restricted by the heavy weight of extant belief networks so that acts of free will typically occur 'outside' of the extant stock of opinions--a decision is made to 'believe' because the old stock of ideas cannot provide evidence pro or con for the compelling idea, and the individual feels that a decision is mandatory. However, decisions to believe in unverifiable propositions can also be made against other demands in consciousness, so that the individual exerts effort to hold the novel ideal in consciousness, over and above older, perhaps more instinctive ideas. This whole process is possible because there is a certain tension within the stream of consciousness itself between the various systems of 'realities', since all systems are incomplete and partial.

James' aim was to create a unified, voluntaristic, functional conception of consciousness and the beginning of a 'holistic' approach to mind--given in the Principles as the structural unity of the stream of of consciousness--is ratified by the pragmatic writings. He hoped to extend his psychological theory by asserting that all beliefs must be assessed in terms of their consequences for the individual so that consciousness could have a unified function correlating with its unified structure. The focus is once again on the active aspect of the idea so that pragmatism is the philosophical analogue of the psychology: all

impulses automatically discharge themselves into movements unless inhibited and the philosophical analysis must therefore concentrate on the consequences, actions, or movements that result from holding any belief in consciousness. James' ratification of the reflex model in psychology had lasting consequences for his philosophy. Unfortunately, neither James' psychology nor his pragmatism attain the unity or holism he hoped for. The functional dualisms of the Principles assert themselves once again in the pragmatism within the diverse methodologies of truth.

Perry gives a good description of the 'world-view' James was attempting to construct and the role of consiousness in that nascent world-view:

> In Philosophy 3, after announcing that pragmatism would be his method and "pluralistic panpsychism" his doctrine, he first expounded the instrumental view of scientific laws; and, in order to explain the harmony between nature and the scientific mind, advanced Peirce's hypothesis of the evolution of the physical order through the "survival of the coherent". Turning to the problem of the unity of the world, he explained such degrees and varieties of unity as the world possesses, in terms of experienced relations. To avoid subjectivism, he argued for the "conterminousness" of minds, that is, their convergence in or towards the same experiences--defending this view against the skeptic on the one hand and the absolutist on the other. Borrowing Peirce's term, he adopted the "tychistic" theory that the ultimate origins of things are both plural and spontaneous. No philosophy, he said, can really avoid the recognition of a sheer datum at some point. But beings of independent and accidental origin can come into interaction with one another, through a spreading "consciousness of transition". This notion suggests different spans of consiousness and the possibility of a consciousness such as God with a span far exceeding that of man. Change occurs in "finite increments"; and the "quantity of being" is finite, though conceptual space and time be infinite. Such a view of the world is not only the most economical description of the discoverable facts, but commends itself as the best postulate for action. It eliminates the problem of evil, and "goes with empiricism, personalism, democracy and freedom" (Perry, 1935/1974, 2, pp. 373-374).

The human mind, in this context, gives the world its coherence; it does this in terms of the relations of experiences. Experience is extended into action and the world becomes more 'practically' and

'intellectually' intelligible.[19] In using pragmatism in this sense, James is extending the structure of consciousness laid down in the Principles and the Pragmatism thus provides the necessary link between James' psychology and his radical empiricism and pluralism.

James believed that the pragmatic theory of truth was simply a collective name for the various processes whose only common elements were that they manufactured truths and that those truths paid at some level of reality. Given the internal differences between the methods of truth and their consequences, it is necessary to look briefly at the relations between the different types of truth. Using the pragmatic method, the 'optimism' that is generated by believing in God, and the house that is predicted to lie at the end of the cow-path are alike in that both the optimism and the house are consequences of the ideas. The ideas pay--it is useful for us to believe them to be true--because by finding the house we save ourselves (see James, 1907/1913, pp. 205-207); by believing in God, we promote good in the world and 'save ourselves' in a wider context. The processes of verification are obviously different in both cases and the means of assuming the belief to be true in terms of the payment of particular consequences also differ in both cases. Finding the house at the end of the path verifies the belief that it might be there. The original concept--that we wish to be saved, or that it would be to the good were we to be saved, leads to a concentration on the particular means by which we are to be saved, so that the idea of connecting the percept of the

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19. It is possible to hypothesize that James believed that as the world became more rational and intelligible, the internal problems in the psychology and the pragmatism would be resolved. The problem with this interpretation, however, is that the particular internal difficulties of the pragmatism were not recognized as problems by James himself.

path to the notion of a house at the end of it can be considered the 'right' conception or the 'particularized' conception of the more abstract notion of survival. Finding the house, then, pays for the abstract notion: that we desired to be saved is verified by the set of actions we take. But the actions we take as a result of believing in the existence of God only serve to verify that we believe in God, as Russell demonstrated. They cannot show anything about the existence or non-existence of God.

Furthermore, the consequences of believing in the existence of the house are definite; the house is there or it isn't, so that we appeal to empirical facts to determine the consequences of the belief. The consequences of believing in ethical or religious postulates are not necessarily empirically verifiable as Russell again demonstrated, so that the consequences themselves must be assessed in terms of whether they are positive or negative, or more often, a mixture of both. James' failure to make these distinctions explicit and his failure to show in detail how the consequences themselves must be assessed and finally related back through the 'right conception' to the abstract ideas is in fact injurious to his pluralistic ideal as Perry describes it (see Perry, 1935/1974; 2, pp. 373-374). The example of the house and the optimism both show that consequences are applied to the 'right conception' rather than the abstract postulate. The consequences may validate the postulate simultaneously with the conception or they may not. And when the consequences cannot necessarily be seen to simultaneously validate the postulate along with the conception, then James' failure to take them back up to the original postulate restricts the movement of consciousness upwards.

James gives some thought to this when he states that new truths are aligned to the whole stock of opinions, thus extending the range

of experience and emphasizing that new truths must make a difference to our experiences. Practically, the truths of science may expand common-sense understanding of phenomena (see James, 1907/1913, p. 216), and they certainly have drastic technological implications (see James, 1907/1913, pp. 186-187). The translations of moral, metaphysical, and religious ideas into practical ideas may eventually serve James' end of making this a more moral and equal world for humanity. But the processes in themselves remain distinct; the process for discovering truth in science cannot be utilized in affirming moral ideas. Nor will the 'will to believe'--so indispensible to the concretization of moral ideas--do anything in terms of telling us whether or not molecular theory is true (at least in James' view). The processes of verification, and the ideation and action that correspond to them, must remain independent. This is of course partly due to James' firm espousal of positivism and his corresponding desire to limit the potential influence of scientific theories upon metaphysical and moral systems.[20]

The division between scientific and metaphysical hypotheses is problematic given James' desire to develop a mutable, temporal pluralistic world-view.[21] The will to believe, is, by James' definition, applicable only in those cases where the issues are momentous, living and forced, and where no empirical evidence can be discovered to

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20. See Mackenzie, 1977, where he argues that something like the 'will to believe' is indispensible in affirming the truth of scientific theories and is necessary to the adoption of any kind of a realist, rather than a positivist, position.

21. Mills attempts to show that James did in fact link science and religion through the will to believe. His analysis is unconvincing however, because the only evidence he adduces to support it is to argue that James insisted that volition was everything in the production of truth (see Mills, 1964, pp. 255-257).

resolve the dilemma. Scientific theories do not require the will to believe because they are derived from the necessary truths and are verified by appeal to the sensible world. Their 'objects' are only secondarily verified (see Chap. 4, pp. 261-285), but they are believable or coercive because they provide some evidence for a correspondence between the two coercive sub-worlds of sense and necessary truth. James' view of scientific progress has substantially changed since 1890. Scientific theories are described as useful ways of linking phenomena together, so that concepts of atoms and forces are 'useful' conceptions; they must not be taken as literal descriptions of what the underlying reality is really like (see James, 1907/1913, p. 91). Scientific theories are also subject to change over time as their usefulness is outgrown and they no longer sufficiently explain new experiences (see James, 1907/1913, p. 57). That scientific theories must change over time is commensurate with James' extension of evolutionary principles in his Pragmatism. He is beginning to overcome the rather explicit dichotomy between the evolutionary structure of the stream of consciousness and the mechanistic construction of the physical world that characterized the Principles. That is, evolutionary principles are not limited to descriptions of the structure of consciousness per se, but are now more explicitly applied to the products of the mind's activity. This is a significant step forward in the philosophication of evolutionary theory for it foreshadows the next stage of James' development when he will argue that our perception that the world really is temporal and mutable can be used to hypothesize that the underlying structures of phemomenal appearances are subject to temporal changes (this development is discussed in Chap. 9).

But James does not altogether succeed in developing an evolutionary concept of scientific progress in his pragmatism. He is still

hampered by rationalist constraints in his definition of the necessary truths which maintain their immutable, absolute status. His failure to recognize that the necessary truths can yield different values as functions of the systems in which they are embedded, serves to limit the possibilities for a major theoretical shift in the scientific world itself. And it is almost paradoxical that James' move towards a holistic account of consciousness actually works against the development of an evolutionary theory of scientific progress. The effect of bringing the whole stock of previous truths to bear on any new 'experience' actually serves to limit the production of radical explanations or theories. The 'acceptable' or 'true' theory is the one that disrupts the whole stock of previous truths as little as possible (see James, 1907/1913, p. 217; quoted above, pp. 521-522).Thus he concludes that scientific theorizing is tightly wedged between the demands of the abstract and sensible sub-worlds, and that it is subject to the demands of cumulative human experience. Finally, it is significant that James does not use the will to believe to overcome the restraints on scientific theorizing. Ethical and metaphysical truths are made true largely by going against the accumulation of experience; scientific hypotheses are not. Therefore, while James argues that atoms and forces must not be taken as literal interpretations of underlying causes, thus progressing from his 1890 position where he implies that the physical world is actually made up of atoms moving to and fro, he does not take the next step and argue that new modes of describing underlying causes could potentially be generated, and with faith in their 'truth', eventually yield verified objects in the physical world.

The methods of truth are constructed according to the trialistic separations of the Principles so that each method is restricted to

A definable set of problems. Thus, the methods of truth that apply to ethical and metaphysical problems cannot be legitimately applied to science for example. The restrictions on the applicability of the methods of truth reinforce the continuous or 'progressive' (as opposed to a relativistic, evolutionary) view of human progress which dominates the Principles. This view of progress was related to James' acceptance of the 'Newtonian' world-view as it applied to scientific progress and his early insistence that the metaphysical and ethical rationalization of the world would follow on the heels of the scientific rationalization.

Pragmatism as an evolutionary epistemology.

The reappearance of a continuous or progressive strand in the pragmatism is rooted in the conditions which gave birth to pragmatism. Pragmatism has its roots in the empiricist tradition of philosophy as well as in evolutionary biology, and the historical conjunction of the two had implications for the theory of history which emerged in the early pragmatist writings. Darwin explicitly constructed his biological theory of evolution so as to be compatible with the mechanistic model of the physical sciences, and with the associationist paradigm of mind. Furthermore, evolutionary theory played a major part in reinforcing the continuous or progressive view of history, for its achievements first appeared to consolidate Newtonian science by extending its range into the biological world. Thus, James initially conceived of pragmatism not as a radical new mode of conceiving human history, but as "A new name for some old ways of thinking". Evolutionary theory in this sense becomes the new piece of experience which must be assessed and integrated into the whole stock of previous truths and experience. That pragmatism went well beyond James' stated aim is a measure of the achievement of the early pragmatists.

The reappearance of the continuous or progressive view of history conflicts with the evolutionary view of progress that James overtly defends in the pragmatic writings. We have shown that James attempted to redefine all of the sub-worlds of reality in terms of the concepts of temporalism and mutability. Furthermore, the evolutionary structure of the stream of consciousness is extended by James' major attempt to show that the products of conscious activity are subject to changes over time. The function of consciousness is to generate a plastic, mutable body of truths which change over time, so that the idea that is 'true' today may no longer hold 'true' tomorrow. The notion that the truth of an idea could be assessed in terms of its consequences grew out of the transformation of biological evolutionary ideas and the theories of truth and meaning were intended to function as sets of methods for attaining knowledge in an uncertain universe. James' transformation of evolutionary postulates led him to believe that more than one method of truth was necessary if man was ever to be able to comprehend the pluralistic worlds of experience. Pragmatism is therefore an evolutionary epistemology and it stands as the first major development in post-evolutionary philosophy. At the same time, we have shown that pragmatism partially ratifies the static or progressive view of history --the world-view that James set out to replace. Thus, the pragmatic writings must be regarded as transitional works: the overall conception of pragmatism is evolutionary, relativistic, and intended to facilitate the growth of knowledge in a recognizably changeable and temporal universe, while some aspects of the individual methods of truth hark back to the older world-view.

The transitional nature of the pragmatism can be related to several factors. James began his restructuring of the various worlds of reality from the perspective of human consciousness so that he

first applied the selected evolutionary postulates to the construction of consciousness itself, and then went on to apply the same concepts to the restructuring of the several worlds that were 'known' by consciousness. The particular problems that he encountered in attempting to restructure the worlds of knowledge were largely due to his selection of human consciousness as the centre of the universe, the selection and transformation of certain biological postulates and the rejection of others, and the universal difficulties in recasting the world in evolutionary terms that confronted scientists and philosophers alike in the late nineteenth and early twentieth centuries (see Young, 1971, pp. 443, 447, 499-500).

We have already stated that James rejected Darwin's law of the survival of the fittest for inclusion in his philosophy, and built his psychogenetic theory on the principle of spontaneous variation. He therefore attempted to account for the survival of spontaneous variations in terms of their 'usefulness' for the individual. But he had the problem of accounting for how changes actually took place over time, and more importantly from James' perspective, how the sentient human thinker could infer that real and significant changes were taking place.[22] At the same time, he had the problem of accounting for stability in the various worlds of reality--if the truth of today was liable to be overthrown by the truth of tomorrow as experience boiled over the limits set for it, some truths seemed to James to remain basically unchanged over time. That is, he was faced with the problem that the accumulation of human experience indicated that the universe often gave the appearance of 'working' according to definable laws. The

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22. The difficulties James experienced in regard to determining the meaning of novelty and causation are discussed in Chaps. 8 and 9.

problem was to discover, from an epistemological perspective, what these laws might be, or at least how the universe might best be rationalized so that human knowledge, although continually subject to change, could serve in the prediction of afferent sensations.

It must be stressed that James was not interested in determining what the new physical and biological postulates would be: he was interested in solving the epistemological problems of how consciousness dealt with a temporal, mutable universe, and what the impact of a consciousness that was constructed in temporal mutable terms would be on that universe. He therefore took consciousness as the centre of the universe, so that human consciousness becomes the glue that holds the experience of the evolving universe together in some kind of coherent form. This is a major reversal of the rationalist-empiricist tradition, wherein the universe was held together by mathematical/mechanical laws, the task of mind being to discover these regular laws beneath the shifting phenomenal appearances that present themselves to perception. Thus, in his pragmatism, James argues that while science postulates that the universe seems to be constituted out of atoms, forces and ethers, we must not really believe in them (see James, 1907/1913, p. 216; quoted above, p. 521). Scientific theories serve the function of rationalizing appearances, but James is insisting that all that we really know <u>are</u> the appearances.

As James extended the principles of temporalism and mutability to the various sub-worlds of reality, he was to emphasize the apparently static features of human conception to an ever increasing degree (see Chap. 9, pp. 655-662). We see in the pragmatic writings that he is uneasy with the concepts of temporalism and mutability--this comes through in his stress on the importance and weight of the accumulated truths of human experience and his continual reminders that new truths

must be assimilated into previously discovered truths (see James, 1907/1913, p. 217; quoted above, pp. 521-522). The rationalist elements in James' theories of truth now become more comprehensible: James' rationalist tendencies now appear not simply as negative intrusions from a rejected world-view, but as structures deliberately incorporated into the new epistemology to ensure that mind could carry out the function of holding the universe together in coherent form. It is necessary to keep in mind that the notion that truth was relative and not absolute originated with James; if he was unable to free himself completely from rationalistic constraints, he still went farther than any of his contemporaries in the immediate philosophication of evolutionary theory.

James' problems in delineating 'workable' methods of meaning and truth are in part due to the difficulty of the task itself, the novelty of the endeavour, and finally to the selection by the early pragmatists of the 'unproblematic' conditions for their doctrine. James returned again and again to British empiricism for the substance of his psychology and philosophy. He recognized, in many instances, that the empiricist structures had contrary implications for the evolutionary view he was attempting to present, and he attempted to correct these with new postulates of his own. At other times he accepted the structures of empiricism and incorporated them into his own theories. The effects of this selective borrowing show in his psychological theory of reality: he accepted the traditional 'breakdown' of experience into the sub-worlds of facts and values, and of facts into necessary and contingent, analytic and synthetic. When he came to apply his pragmatic methods to these sub-worlds for the purpose of showing how truth was generated, he was in the position of applying evolutionary constructs to statically structured traditional reality. The conditions for the birth of

pragmatism in fact proved to be extremely problematic.

The inconsistences and internal problems of the pragmatic methods of truth coupled with the progressive evolutionary stand James took on epistemological issues account for the mixed reception his Pragmatism received. It was a tremendously popular work, exciting comment from all quarters of the philosophical establishment.[23] Pragmatism as James conceived it has not been a particularly 'successful' doctrine and yet it has left an indelible mark upon modern philosophy, witness the number of prominent philosophers--Ayer, White, Thayer, and Morris--who have commented in detail upon it, and who have obviously found valuable ideas in it for the extension of their own particular philosophical understanding.

Thayer writes that by concentrating upon the consequences of beliefs James, Peirce, and Dewey between them changed the 'focus' of empiricism (see Thayer, 1968, p. 137). James' contribution to this shift in emphasis is perhaps the most outstanding achievement of his pragmatism. As Thayer points out, James was the first to construct a theory of truth along the relativistic lines demanded by the new evolutionary theory. If the theory of truth itself turns out to be several distinct methods of truth with different modes of verification, the overall idea of truth as relativistic, mutable, temporal, and manufactured out of human experience provides at least an alternative framework for philosophy. The pragmatic theory of truth forms a major portion of James' attempt to restructure empiricism in such a way as to bridge the epistemological gap between Newtonian mechanics and human experience. James' half-hearted rationalism reflects his

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23. See Perry, 1935/1974, 2, pp. 453-454, 463-468, for a detailed account of the reception of James' Pragmatism. James' critics included Stumpf, Royce, Everett, Ward, and Hodgson.

difficulties in making the shift so that the physical laws which describe the universe can, as scientific formulations, be made dependent on experience. There may be absolute universal laws but insofar as these may only be assumed to exist beyond human experience in its totality, they are not available as hypotheses for philosophy. Truth in the Jamesian sense is a distinctly human experience and man finally becomes the measure of progress in the world. The theory of truth necessitates a view of man's intelligence as the measure of the evolving universe, so that any absolute coming together of experience must be a human experience. With James' theory of truth, evolutionary theory comes of age within philosophy.

CHAPTER 8

RADICAL EMPIRICISM AS THE IDEAL

The Problem

James' first systematic description of radical empiricism appears in the preface to The meaning of truth[1] when he says that he is "interested in another doctrine in philosophy" which he calls radical empiricism (James, 1909, p. xii). Thus, the pragmatic theory of truth is described as "a step of first-rate importance in making radical empiricism prevail" (James, 1909, p. xii). James' commitment to radical empiricism was intense: in 1905 he was writing to Ferrari: "I am interested in a metaphysical system" ("Radical Empiricism") which has been forming itself within me, more interested in fact, than I have ever been in anything else" (James, quoted in Perry, 1935/1974, 2, p.387). Perry believed that James' enthusiasm for radical empiricism was justified because:

> the notion of pure experience was his deepest insight, his most constructive idea, and his favorite solvent of the traditional philosophical difficulties. Pragmatism provided his method or technique and pluralism the architecture of the finished product; but radical empiricism gave him his building material (Perry, 1935/1974, 2, p. 388).

James adoped a form of psychophysical parallelism in the Principles to describe the mind-body relation and the corresponding subject-object distinction in order to satisfy the positivistic constraints he felt must be imposed upon psychology if it was to attain a real place within science. But his dissatisfaction with dualism in the Principles is immediately evident, and the seeds of radical empiricism appear in the structuring of the stream of consciousness, and in the descriptions of percepts and concepts with their phenomenal overtones (see Wilshire,

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1. Radical empiricism is first mentioned in the preface of The will to believe (see James, 1897/1911, p. vii).

1968, p. 5; see also James, 1890, 1, pp. 299-305). The theories of Darwin and Renouvier initially motivated James to restructure consciousness and to redefine its ends and its functions. In his pragmatic writings, he extended his usage of the concepts of temporalism and mutability to apply to the physical world as well as to the consciousness that knows the world. In turn, this restructuring led James to the conclusion that the focus of empiricism itself must be changed from the absolute a priori view of truth which the mind gradually attained to a view of truth as an active process where the content of feelings could only be verified through interaction with an external world. And here of course, in dealing with conception and its relation to the external world James ran into the same epistemological gulf between the knower and the known that had plagued empiricists and rationalists alike from the beginnings of the scientific revolution. This substantial gap between percepts and concepts, subject and object, knower and known was the barrier that had to be overcome if a functional view of man was to be possible. James thought that the gap could be bridged if he could show that real relations obtained between objects in the sensible world, that these relations could be perceived, and beyond that, conceptualized for what they were. As we will show in detail, James modified his concept of pure experience to provide an ontological equivalence between thoughts and things. The ontological equivalence between thoughts and things was to be obtained by making relations between objects--both mental and physical--into real events with an equivalent ontological status to the objects themselves.

Perry writes that James was "reared in the tradition of British Empiricism, and he was never emancipated" (Perry, 1935/1974, 2, p. 494). At the same time James realized that his philosophical system could not rest on the arbitrary dualism adopted in the Principles and

that his epistemology required a firmer metaphysical foundation. Writing in 1907 to Strong in reply to Strong's comments on the radical empiricism papers, James says:

> But the problem there was metaphysical, not epistemological; it was an analysis of the nature of what is experienced, not of the meaning of knowing, and whatever epistemology I may have brought in was by the way, and illustrative, not fundamental (James, quoted in Perry, 1935/1974, 2, p. 550).

James' relationship with the British empiricists is complex: while their influence remained profound, the combined influences of Darwin and Renouvier eventually forced him to acknowledge that the metaphysical basis of British empiricism could not provide a viable base for his own epistemology. He had already discarded substantial portions of the British empiricist epistemology in his psychology and his pragmatism and he was now to discard portions of the traditional empiricist metaphysic in radical empiricism. At the same time, he interpreted Locke and Berkeley as providing the basis for his own radical version of empiricism because they provided a concrete means of understanding the dualism between subject and object:

> The entering wedge for this more concrete way of understanding the dualism was fashioned by Locke when he made the word 'idea' stand indifferently for thing and thought, and by Berkeley when he said that what common sense means by realities is exactly what the philosopher means by ideas (James, 1904/1967a, p. 10).[2]

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2. The essays which make up Essays in radical empiricism (first published in collected form in 1912, according to James' wishes), were originally published as individual papers in the years 1884, 1904, 1905, and 1906. In 1942, Perry brought out a new edition of the Essays, which was subsequently reprinted in 1967. In the 1942 edition, Perry omitted several of the essays which had appeared in the 1912 edition: the 1884 paper was omitted because Perry claimed that it was written before James' theory of radical empiricism had matured. Several other papers were also omitted in the 1942 edition because Perry felt that "they are primarily controversial in character" (Perry, 1942/1967, p. v, preface to the Essays). The 1967 reprint of the 1942 edition has been used in this thesis, and references to the individual papers which make up the Essays are referred to by their original publication dates--for example, 1904/1967a. Papers which were omitted in Perry's 1942 edition

(contd.)

Many of James' colleagues (notably Peirce, Dewey, and Baldwin) took their philosophical starting point from Kant: James' adherence to the British empiricists determined the problems he chose for analysis, and the particular solutions he devised. This allegiance to British empiricism set him apart from his contemporaries and is in part responsible for the 'uniqueness' and 'radicalness' of his solutions to problems which engaged much of nineteenth century thought.[3]

James wrote that radical empiricism consisted of a postulate, a statement of fact, and lastly, a generalized conclusion. His postulate states that: "the only things that shall be debatable among philosophers shall be things definable in terms drawn from experience" (James, 1909, p. xiii). James' statement of fact is : "that the relations between things, conjunctive as well as disjunctive, are just as much matters of direct particular experience, neither more so nor less so, than the things themselves" (James, 1909, p. xii). He concludes from this:

> that therefore the parts of experience hold together from next to next by relations that are themselves part of the experience. The directly apprehended universe needs, in short, no extraneous trans-empirical connective support, but possesses in its own right a concatenated or continuous structure (James, 1909, pp. xii-xiii).

We see immediately how far James deviated from the traditional empiricism when he proposed his radical version; he included relations

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2. (contd.) are referred to by their original publication date and the date of the first edition of the Essays--for example, 1905/1912a.

3. Kuklick believes that James was less committed to British empiricism than Perry claims. Kuklick shows that many of James' views did not in fact contradict the neo-Kantian philosophy of his day as it was expressed by Royce and Bradley. Kuklick allows that James believed that his own metaphysics was incompatible with neo-Kantianism, so that Perry's view is vindicated in terms of James' own assessment of his position. At the same time, Kuklick makes a convincing case for the presence of neo-Kantian elements in James' radical empiricism (see Kuklick, 1977, pp. 316-319).

as real aspects of experience, and he used 'experience' to include everything 'real', so that:

> Nothing shall be admitted as fact, ...except what can be experienced at some definite time by some experient; and for every feature of fact ever so experienced, a definite place must be found somewhere in the final system of reality. In other words: Everything real must be experienced somewhere, and every kind of thing experienced must somewhere be real (James, 1905/1967d, p. 160).

Some of the epistemological problems of the earlier empiricists have already been discussed above (see Chap. 1, pp. 10-29, and Chap. 7, pp. 462-482). James had struggled throughout his career to find workable solutions for these difficulties. The first part of James' solution appears in the Principles as the structurally unified stream of consciousness. But he was unable to construct the stream of consciousness without basing his psychology on a mind-body dualism and a corresponding subject-object distinction, and in addition, his various philosophical commitments led him to incorporate a functional dualism into the psychology. James had never been happy with the legislated dualism of the Principles, and he realized that it was imperative that he provide a metaphysical basis for reality where one central concept would serve the same analogous function in unifying the possible worlds of reality, as the concept of feeling united the internal aspects of consciousness; furthermore, the new 'conception' had to unite the cognitive and physical worlds. That concept was to be 'pure experience'.

Berkeley and Hume agreed that there could be no unperceived perceptions (see Acton, 1967, p. 299; see also MacNabb, 1967, p. 83). Furthermore, Hume wrote:

> Thus there is a direct and total opposition betwixt our reason and our senses; or more properly speaking, betwixt those conclusions we form from cause and effect, and those that persuade us of the continu'd and independent existence of body. When we reason from cause and effect, we conclude, that neither colour, sound, taste, nor smell have a continu'd and independent existence. When we exclude these sensible

> qualities there remains nothing in the universe, which has such an existence (Hume, 1739/1962, 1, IV, III, p. 81).

These conclusions rest on the doctrine of primary and secondary qualities; they are also compatible with a kind of philosophic theism which minimally relies upon the concept of a remote God initially designing the world, and maximally upon a conception of a God who constantly maintains the permanent possibilities of perception. The much aforementioned success of Newtonian physics provided a rationale for the continued acceptance of the distinction between the 'contents' of perception and the 'ideas' about reality, and for the conclusion that these 'ideas' could not be derived from purely perceptual experience. Furthermore, as Thayer shows, Hume strengthened the separation between ideas and perceptual experience when he stated that necessary relations were to be found only between ideas in the mind and not between objects (see Thayer, 1968, p. 68; see also Hume, 1739/1962, 1, III, VII, pp. 44-51). The laws of association, described as propensities of mind, determine our conceptions of cause and effect.

James' commitment to the notions of temporalism and mutability made it impossible for him to incorporate the metaphysics of the British empiricists into his philosophy without substantial revision. The guarantee of permanent possibilities of perception was nullified for James when he accepted evolutionary theory. Instead, James insisted, ideas must bring us into confrontation with objects, and the relations between events must be posited to exist outside of cognition as real events in the sensible world. If the possibilities of perception are liable to change, this change in their status can only be accounted for if there is a real and viable interaction between objects. Similarly, if the individual is to perceive these changes (or permanencies), his mind must be structured so as to allow him to perceive external

relations between objects as well as the objects themselves. James describes the distinction as follows:

> Years ago, when T.H. Greene's ideas were most influential, I was much troubled by his criticism of english sensationalism. One of his disciples in particular would always say to me, 'Yes! terms may indeed be possibly sensational in origin; but relations, what are they but pure acts of the intellect coming upon the sensations from above, and of a higher nature? I well remember the sudden relief it gave me to perceive one day that space-relations at any rate were homogeneous with the terms between which they mediated. The terms were spaces, and the relations were other intervening spaces. For the Greenites space-relations had been saltatory, for me they became thenceforward ambulatory.
>
> Now the most general way of contrasting my view of knowledge with the popular view (which is also the view of most epistemologists) is to call my view ambulatory, and the other view saltatory; and the most general way of characterizing the two views is by saying that my view describes knowing as it exists concretely, while the other view only describes its results abstractly taken (James, 1909, pp. 138-139).

The building blocks of James' ambulatory view of 'knowing concretely' are contained in his conception of pure experience, and he writes:

> My thesis is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff 'pure experience', then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter. The relation itself is a part of pure experience; one of its 'terms' becomes the subject or bearer of the knowledge, the knower, the other becomes the object known (James, 1904/1967a, p. 4).

With this explanation of knowing as a relation between parts of experience, James hopes to plunge the individual into a world that is directly known as it is experienced:

> The great obstacle to radical empiricism in the contemporary mind is the rooted rationalist belief that experience as immediately given is all disjunction and no conjunction, and that to make one world out of this separateness, a higher unifying agency must be there (James, 1909, p. xiii).

For James, the external world is composed of objects and the relations between them and he incites his readers again and again to plunge back into the rich, flowing, changing world of experience. Having

structured consciousness as a selective, changing, personal, continuous, cognitive process, he is now ready to complete the fashioning of an external world which corresponds with, and is immediately accessible to that consciousness. In fact, he goes much farther than mere parallelism with the revised concept of pure experience for he is to argue that both mind and the world are types of pure experience taken in different ways. To this end, James asserts in his famous paper "Does consciousness exist?" that the word 'consciousness' stands not for an entity but for a function:

> There is, I mean, no aboriginal stuff or quality of being, contrasted with that of which material objects are made; but there is a function in experience which thoughts perform, and for the performance of which this quality of being is invoked. That function is knowing. 'Consciousness' is supposed necessary to explain the fact that things not only are, but get reported, are known. Whoever blots out the notion of consciousness from his list of first principles must still provide in some way for that function's being carried on (James, 1904/1967a, pp. 3-4).

By asserting that "thoughts in the concrete are made of the same stuff as things are" (James, 1904/1967a, p. 37), and by denying that consciousness is itself composed of a substance qualitatively distinct from the substance of the material world, James hopes to make a case for the "neutral monism" (see Kuklick, 1977, p. 232) of the world of pure experience. He states that this idea is not as radical as it may first appear: Kant, he says, essentially laid the notion of the substantial soul to rest when he described the transcendental ego in its stead. As a consequence, the empiricist writers have developed a concept of the 'spiritual principle' where it becomes a name only "for the fact that the 'content' of experience is known" (James, 1904/1967a, p. 2). Moreover, he cites Baldwin, Baudin, Ward, King and Alexander as publishing articles in which they seem "just on the point of abandoning the notion of consciousness, and substituting for it that of an

absolute experience not due to two factors".[4] James suggests that these writers have not been radical enough in discarding consciousness as an entity. According to Perry, by the time James came to actually write the Essays, he had outgrown the influence of the positivists and Renouvier so that James' radical empiricism is in agreement with some of the general philosophical trends of the times, and at the same time, it is an individual contribution (see Perry, 1935/1974, 2, p. 390). Perry sums up the gradual evolution of James' thought as it culminated in radical empiricism with its central concept of pure experience:

> The same desire to escape the dualism of subject and object which had led to his "phenomenalism" drove him to look beyond the intrinsic duality of phenomena. In 1884, in the earliest working out of his theory of knowledge, he substituted a relation within consciousness for the supposed relation of consciousness to an outside object; and described "knowledge by acquaintance" as the case in which the mind actually crosses the path of nature, through a point of intersection common to both. In the Principles he perpetually converted the subject of consciousness into content of consciousness. With such doctrines germinating in his mind for twenty-five years there is no need of attributing his radical empiricism to any source outside of James himself (Perry, 1935/1974, 2, pp. 390-391).

But having proposed the neutral monism of pure experience, James had problems as difficult to resolve as those he encountered in his reading of the British empiricists. Perry states James' major problem succinctly:

> But now he had definitely renounced dualism, and in place of thoughts and things there were only "experiences". If these possessed the uniqueness and indivisibility of thoughts, they must lose the commonness and permanence of things; and there would remain only the desperate alternative of solipsism. If, on the other hand, they possessed the commonness and permanence of things, then they could never enter directly into a uniquely individual conscious experience. How to conceive experience so that it could retain both sets of properties, composing both

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4. (James, 1904/1967a, p. 2). James also states that R.B. Perry is already "over the border"--one of James' few references to Perry.

> the immediate and the transient life of the subject and the stable world of common objects--that was James's problem (Perry, 1935/1974, 2, p. 394).

James built his radical empiricism around his concept of pure experience and the relations between its parts; these ideas will now be defined and discussed in terms of the advantages James hoped to gain through their inclusion in philosophy. They are complex ideas and it is necessary to look at them in some detail before evaluating radical empiricism in light of the major difficulties that Perry and others had with accepting the doctrine.

Pure Experience

> 'Pure experience' is the name which I gave to the immediate flux of life which furnishes the material to our later reflection with its conceptual categories. Only new-born babes, or men in semi-coma from sleep, drugs, illnesses, or blows, may be assumed to have an experience pure in the literal sense of a that which is not yet any definite what, tho' ready to be all sorts of whats; full both of oneness and of manyness, but in respects that don't appear; changing throughout, yet so confusedly that its phases interpenetrate and no points, either of distinction or of identity, can be caught. Pure experience in this state is but another name for feeling or sensation. But the flux of it no sooner comes than it tends to fill itself with emphases, and these salient parts become identified and fixed and abstracted; so that experience now flows as if shot through with adjectives and nouns and prepositions and conjunctions. Its purity is only a relative term, meaning the proportional amount of unverbalized sensation which it still embodies.
>
> Far back as we go, the flux, both as a whole and in its parts is that of things conjunct and separated. The great continua of time, space, and the self envelope everything, betwixt them, and flow together without interfering. The things that they envelope come as separate in some ways and as continuous in others. Some sensations coalesce with some ideas, and others are irreconcilable. Qualities compenetrate one space, or exclude each other from it. They cling together persistently in groups that move as units, or else they separate. Their changes are abrupt or discontinuous; and their kinds resemble or differ; and, as they do so, they fall into either even or irregular series (James, 1905/1967a, pp. 93-95).

'Pure experience' describes the first 'interaction' between the sentient being and the external world--in its pure state, James says, it is merely another name for feeling or sensation and it is retained

in our later 'cognitive' apprehension of reality as the unverbalized sensations we receive. The definition of pure experience is given totally in terms of the human observer: this does not mean that the existence of the external world is dependent upon sentient beings, but it does mean that 'pure experience' as a metaphysical view of reality is dependent upon a perceiving individual. Pure experience is 'composed' of feelings or sensations and in this sense, the doctrine can be described as a psychological, or subjective view of reality.

The concept of pure experience is derived from James' interpretation of evolutionary theory: he claims that we developed abilities to 'intellectualize' our relationship with 'reality' because the natural world is a dangerous place--it kills as well as sustains--and to the extent that we are able to separate and conceptualize our experiences, we are prepared to act and react, and thereby save ourselves. Once we have developed our conceptual powers, we have the option of following new intellectual demands, or of returning with our new understanding to the flux of experience once again. James would have us follow the latter course, for only then, he says, do thoughts follow their ultimate and real function which is to bring us into new relationships with the sensible world (see James, 1905/1967a, pp. 96-97).

The separation of pure experience into subjective and objective elements is achieved with the development of cognition; pure experience is neither mental nor physical, but consists of a co-mingling of sensations or feelings belonging to the individual (see James, 1905/1967a, p. 92). This is the insight that led James to make the subject-object distinction secondary; at the primitive level of pure experience, the individual is unaware of where the object itself leaves off, and his own 'mind-body' begins. In this model, the awareness of 'self' is a secondary development; it is a reflective, or second experience. This

is an extension of the psychological concept of self (see James, 1890, 1, pp. 291-293) where any concept of self is given in relation to a particular facet of experience. The concept of self is relative; the fact that we retain our 'impression' of self-identity is taken care of in James' earlier structuring of consciousness as continuous in the midst of change. The concept of pure experience is therefore structurally parallel with James' earlier definition of consciousness; pure experience is continuous and constantly changing, and when it is taken as the combination of reality and observer, it can be declared to be selective and personal as well. These last two qualities may be seen as 'latent' potentials in the would-be knower; any 'piece' of pure experience contains the perceiving consciousness and the field of reality in one event. The characteristics of the potential 'knower' are as much a part of any 'unit' of pure experience as the external 'objects' and 'relations' which extend the experience in space and time.

This definition holds as long as the observer and the object are described in conjunction with one another so that the experience is composed of cognitive and physical elements. But James was putting forth pure experience as an objective theory which would support a realist view of the external world so that he maintained that pure experience was composed of the personal independent biographies of all of its participants, be they potentially sentient or not (see James, 1904/1967a, pp. 11-15). In this way, the object of potential perception continues to exist independently of any sentient knower (see James, 1904/1967a, pp. 12-14). The division of experience into knower and known is a secondary process, where a new dimension is <u>added</u> to the primitive relation between the components that make up the whole of the concatenated universe (see James, 1904/1967a, pp. 9-10, 23). James wants to extend his psychological view of pure

experience into a metaphysical view of a concatenated universe and to do this he must show that the 'pure experience' notion can be used to describe objects independently of any sentient observer, and at the same time, show that the mental and physical qualities of any event are truly ontologically continuous.

In his essay "Does consciousness exist?" James says that the Kantian philosophers maintained that "consciousness is one element, moment, factor...of an experience of essentially dualistic inner constitution" (James, 1904/1967a, p. 8). He then reverses this position so that:

> Experience, I believe, has no such inner duplicity; and the separation of it into consciousness and content comes, not by way of subtraction, but by way of addition--the addition, to a given concrete piece of it, of other sets of experiences, in connection with which severally its use or function may be of two different kinds. ...Just so, I maintain, does a given undivided portion of experience, taken in one context of associates, play the part of a knower, of a state of mind, of 'consciousness'; while in a different context the same undivided bit of experience plays the part of a thing known, of an objective 'content'. In a word, in one group it figures as a thought, in another group as a thing. And, since it can figure in both groups simultaneously we have every right to speak of it as subjective and objective both at once (James, 1904/1967a, pp. 9-10).

James must now show that 'subjective' and 'objective' can be taken as 'characteristics' of experience which are determined by their relationships at given intersections in time and space. 'Subjective' and 'objective' are to be used to describe secondary, or functional relationships between the parts of experience, for James is determined to rid the terms of their traditional status as the primary, ontological distinctions between events. If this could be successfully done, the gap between mind and nature would disappear, and we would have an a priori guarantee that our perceptions of the world were accurate. In order to close the gap between mind and nature and to guarantee that the perceiving mind actually 'gets' the real

object, James hypothesized that any given experience can be in two places at once, while remaining one thing in itself:

> if the 'pure experience' of the room were a place of intersection of the two processes, which connected it with different groups of associates respectively, it could be counted twice over, as belonging to either group, and spoken of loosely as existing in two places, although it would remain all the time a numerically single thing (James, 1904/1967a, p. 12).

'Pure experiences' may be treated in this manner because of the multiplicity of relations to the rest of experience that each 'experience' exhibits. Thus James can describe the 'room experience' as being subject to various mental and physical operations which it undergoes as a piece of experience:

> The physical and the mental operations form curiously incompatible groups. As a room, the experience has occupied that spot and had that environment for thirty years. As your field of consciousness it may never have existed until now. As a room, attention will go on to discover endless new details in it. As your mental state merely, few new ones will emerge under attention's eye. As a room, it will take an earthquake, or a gang of men, and in any case a certain amount of time, to destroy it. As your subjective state, the closing of your eyes, or any instantaneous play of your fancy will suffice. In the real world, fire will consume it. In your mind, you can let fire play over it without effect. As an outer object, you may pay so much a month to inhabit it. As an inner content, you may occupy it for any length of time rent-free. If, in short, you follow it in the mental direction, taking it along with events of personal biography solely, all sorts of things are true of it which are false, and false of it which are true if you treat it as a real thing experienced, follow it in the physical direction, and relate it to associates in the outer world (James, 1904/1967a, pp. 14-15).

And this leads us straight into the traditional subject-object problem. James tries to nullify the traditional distinction between subject and object when he states that the subjectivity and objectivity of any experience "are functional attributes solely" (James, 1904/1967a, p. 23)--that is, when the 'piece' of experience is the subject of contemplation. In immediate, or 'pure experience' he says that the experience "is only virtually or potentially either object or

subject" (James, 1904/1967a, p. 23). For James, experiences do not immediately 'come' to us separated into subjective and objective components. Experiences are made of precisely what they appear to be made of: thus 'experience' is a collective term "for all these sensible natures, and save for time and space (and, if you like, for 'being') there appears no universal element of which all things are made" (James, 1904/1967a, p. 27). By insisting that experiences are 'unique' in their construction, James can move onto the next stage which is to show that 'subject' and 'object' are not separated by a whole order of being at all, but instead must have some attributes at least in common, else it could not:

> be so hard to tell, in a presented and recognized material object, what part comes in through the sense organs and what part comes 'out of one's own head'? Sensations and apperceptive ideas fuse here so intimately that you can no more tell where one begins and the other ends, than you can tell, in those cunning circular panoramas that have been lately exhibited, where the real foreground and the painted canvas join together (James, 1904/1967a, pp. 29-30).

Fite pointed out that 'experience' in the sense James is using it "invariably turned out to be subjective" (Fite, quoted in Perry, 1935/1974, 2, p. 391). James replied to Fite that the subject-object distinction followed the experience, and that he had in fact already made this point in some detail in his essays (see Perry, 1935/1974, 2, pp. 391-392). James' rationale for making the subject-object distinction follow experience was to preserve an essential realism for the physical world, while still making that world immediately available to the necessarily subjective observer. He drew the distinction between mental and physical events in terms of their consequences and attempted to equate events through emphasizing the difficulties that ensue when the individual tried to make an absolute distinction between the subjective and objective components of any given piece of

experience. James hoped in this way to defend himself against the charge that his world was subjective. The existence of 'mental' fires depended upon sentient beings while the existence of 'real' fires supposedly did not. However, the separation of experience into mental and physical worlds depended upon sentient beings, and James made it fairly explicit that the physical world was constituted out of those parts of experience which we separate out of the experience-chaos because they appear to act independently and lawfully from our vantage point. That is, the determination that 'real' fires burn 'real' sticks is a product or deduction made by the selective, sentient observer, and therefore any particular physical universe described depends upon the perceptions and deductions of an observer. In this sense any particular universe is subjectively derived because James then went on to say that the remoter aspects of the physical world are 'constructs' out of our conceptions. James writes:

> Why, for example, do we call a fire hot, and water wet, and yet refuse to say that our mental state, when it is 'of' these objects, is either wet or hot? 'Intentionally', at any rate, and when the mental state is a vivid image, hotness and wetness are in it just as much as they are in the physical experience. The reason is this, that, as the general chaos of all our experiences gets sifted, we find that there are some fires that will always burn sticks and always warm our bodies, and that there are some waters that will always put out fires; while there are other fires and waters that will not act at all. The general group of experiences that act, that do not only possess their natures intrinsically, but wear them adjectively and energetically, turning them against one another, comes inevitably to be contrasted with the groups whose members, having identically the same natures, fail to manifest them in the 'energetic' way. ...Mental fire is what won't burn real sticks; mental water is what won't necessarily (though of course it may) put out even a mental fire. Mental knives may be sharp, but they won't cut real wood. Mental triangles are pointed, but their points won't wound. With 'real' objects, on the contrary, consequences always accrue; and thus the real experiences get sifted from the mental ones, the things from our thoughts of them, fanciful or true, and precipitated together as the stable part of the whole experience-chaos, under the name of the physical world. Of this our perceptual experiences are the nucleus, they being the originally strong experiences. We add a lot of conceptual experiences to them, making

> these strong also in imagination, and building out the remoter parts of the physical world by their means; and around this core of reality the world of laxly connected fancies and mere rhapsodical objects floats like a bank of clouds (James, 1904/1967a, pp. 41-33).

This construction is problematic from an empirical perspective: the extent of the separation between energetic and non-energetic fires would appear to support the strong empirical proposition that the difference between them is fundamental, and the fact that the separation is a product of cognitive development does not appear to make it any less real. Realism in James' sense appears to grow out of the separation of events into knower and known and in this sense the conclusion that a real world exists independently of human experience depends upon human subjectivity. At least, the conclusion that a particular real world exists is subjectively derived. To put the problem in slightly different terms, we might ask what the status of any piece of pure experience is before it is divided into knower and known. Perry, trying to come to grips with the problem of whether James had succeeded in ensuring a realist base, asks the same question when he considers the status of the parts of nature which lie beyond human cognition (see Perry, 1935/1974, 2, p. 388).

Perry shows that in making 'pure experience' antedate the subject-object distinction, James abandoned idealism for a type of realism where consciousness exists within the larger totality of experience as a whole. And he criticizes James for failing to make his position clear. The adoption of realism forced James to consider the status of "those parts of nature that lie beyond the mental reach of man. They consisted of further experiences, no doubt--but whose?" (Perry, 1935/1974, 2, p. 388). Thus, Perry goes on to say, James wavered between adopting panpsychism or alternatively making these experiences 'potential' experiences of man, so that his realism has remained ambiguous

to his critics (see Perry, 1935/1974, 2, p. 388). It remains ambiguous because the determination of those experiences which will constitute any particular reality is given to human observers. Any experience which is not available to human cognition necessarily has a dubious ontological status in James' conception because it cannot be qualitatively distinguished and therefore described as acting in any particular way.[5] And this becomes a serious difficulty when James turns to the problem of causation. His philosophy of pure experience makes it impossible for him to derive any underlying causal principles for events beyond our experience of feelings of activity and our perceptual observations and conceptual extractions of the relations between events.

James' desire to show that the subject-objective distinction is 'learned' through experience is consistent with his epistemological contention that feelings are not initially 'cognitive' of anything beyond their own existence but become cognitive of the external world through the process of experience and interaction (see James, 1885/1909, pp. 5-6). Thus, the subject-object distinction comprises the sophisticated understanding of reality; primitive experience contains no 'pre-determined' separations, and James' account of the means whereby events are differentiated into physical and mental objects

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5. It is perhaps significant that in 1890, James had written:

> It seems as if the elementary psychic fact were not thought or this thought or that thought, but my thought, every thought being owned. Neither contemporaneity, nor proximity in space, nor similarity of quality and content are able to fuse thoughts together which are sundered by this barrier of belonging to different personal minds. The breaches between such thoughts are the most absolute breaches in nature. Everyone will recognize this to be true, so long as the existence of something corresponding to the term 'personal mind' is all that is insisted on, without any particular view of its nature being implied (James, 1890, 1, p. 226).

is based upon his psychological account of the development of perception and conception.

James invokes evolutionary processes to provide a naturalistic explanation for the development of perception and conception, and the congruent subject-object distinction (see James, 1905/1967a, pp. 96-97). But he does not develop this theme any further, and all that such passages really do is to demonstrate James' conviction that the affections and the higher cognitive faculties emerged in a 'naturalistic' context and therefore have a 'naturalistic' relationship with the concrete world. Basically, we are cognitive of reality because our conceptual faculties were originally separated out of the greater flux of reality. James says that rationalists and naturalists alike agree that the mind has a naturalistic basis, but they part company when the question of the function of mind is raised (see James, 1905/1967a, p. 97). Perhaps this consensus on the natural genesis of mind makes James confident that he can forego any detailed analysis of the means by which some experiences 'grew less active' while others retained their 'energy'.[6] James never worked out a means of determining the genesis of ideas which satisfied him so that the 'causal' statements in the essays can only be presented as possible hypotheses and James make this clear in his discussion:

> If one were to make an evolutionary construction of how a lot of originally chaotic pure experiences became gradually differentiated into an orderly inner and outer world, the whole theory would turn upon one's success in explaining how or why the quality of an experience, once active, could become less so,

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6. James is discussing the genesis of what he refers to as 'appreciations'--beauty, ugliness, love, hatred, pain and pleasure. He argues that these qualities appear to coexist in the object and the perceiver so that they occupy a half-way position between mind and object, and are therefore less active than the 'purely physical energies' of objects (see James, 1904/1967a, pp. 34-35).

> and, from being an energetic attribute in some cases, elsewhere lapse into the status of an inert or merely internal 'nature'. This would be the 'evolution' of the psychical from the bosum of the physical, in which the esthetic, moral and otherwise emotional experiences would represent a halfway stage (James, 1904/1967a, pp. 35-36).

The benefits of an evolutionary analysis are obvious: if the conceptual areas of knowledge evolve from the physical, and the metamorphosis is given strictly in terms of energy then there is a naturalistic bond between external objects and conceptions of them and James would have grounds for an ontological equivalence between thoughts and things.

Marcell writes that James' radical empiricism was an attempt "to put the Humpty-Dumpty atomism of empiricism back together again while still avoiding the holistic monism of the rationalists" (Marcell, 1974, p. 180). James went about reconstructing empiricism by making experience holistic and prior to any intellectual distinctions through the concept of pure experience and the concretization of the relations, and he countered traditional monism with a view of the universe as a 'concatenated structure' (see James, 1909, pp. xii-xiii). These concepts gave James the philosophical structure he needed to support his psychological constructs of the cognitive processes as functions of separation and selection. The division of events into mental and physical objects requires an active, sentient participant and any separations that result are sophisticated products of the active intellect. In taking this stand, James felt he had succeeded in constructing an alternative to the older empiricism. The concept of pure experience provides the basis for James' later pluralism, because the cuts and selections that are made (which eventually lead to the reconstruction of the sensible world) first depend upon the excursions of the individual into the neutral monism of pure experience. Later, in his final philosophy, James will extend his notion of pluralism to

include objective criteria for the apprehension of 'truly' novel events in the concrete world.

All traditional epistemologies and psychologies demand that a distinction be made at some point between physical and mental events --between the 'qualities' of our cognitive experiences, whether they are perceptual or purely conceptual. For the individual moving at some intersection between mental and physical events, the distinction is experientially primary; psychologically, cognition means making subject-object distinctions. And James is careful to make qualitative distinctions between the two types of experience (see James, 1904/1967a, pp. 31-33). What he does deny is that there is a real ontological distinction to be made between them and he attempts to show that there cannot be one, through the use of the 'affectional facts' (see James, 1905/1967c, pp. 137-142).[7] These stand 'evolutionarily' between the psychical and the physical, and serve as connections between the two. They account for much of the 'blurring' that takes place in the strict analysis of perceptions into their 'mental' and 'physical' content. Perception thus becomes an interaction between the object and the observer and this accounts for James' description of knowledge as a relation between two experiences wherein one becomes the knower and the other the known.

James' use of the affectional facts to show that the subject-object distinction is really not as clear-cut as it might intuitively appear is important in the history of philosophy. Although James'

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7. The 'affectional facts' correspond to what would more commonly be called the emotions. James now refers to the emotions as affections in order to stress that the affections do not 'exist' solely in the mind of the perceiver, nor in the physiological movements of his body, but also in the objects which evoke them in the sentient observer. The status of the affectional facts is discussed in more detail below in the critical appraisal of radical empiricism.

specific use of evolutionary premises to lend support to his pure experience hypothesis is sometimes fragmentary and unsatisfactory,[8] the broad evolutionary concepts of temporalism and mutability were crucial in providing inspiration for a functional psychology of experience. If the subject-object distinction must be made in all epistemologies, James shows clearly that there are no absolute lines of demarcation for making it. James' particular value for psychology in this regard lies in his refusal to take scientific constructs into account as determining the boundaries for the objective and subjective qualities of any experience. Instead, he constructs a consciousness where the distinction between subject and object is made according to the functional relationship between the parts of any experience.

Because James' own empiricism was so thoroughly grounded in the older British empiricism, he still had the psychologically problematic doctrine of the primary and secondary qualities to deal with. Although he had succeeded in recasting the doctrine in evolutionary terms in the Principles, his analysis of the worlds of reality remains based on the doctrine, so that those objects which are perceived through tactile sensations constitute the 'primary' reality. Similarly, his view of scientific objects and their 'indisputable' realness owes much to the doctrine. At the same time, both the Principles and the Pragmatism incorporate an alternative relativistic strand which clashes

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8. This does not mean that radical empiricism is not based on evolutionary principles. It is an evolutionary metaphysic in the same sense that pragmatism is an evolutionary epistemology because it is based on the principles of temporalism and mutability. The 'fragmentary' application of evolutionary principles refers to James' tendency to use evolutionary theory as a mandate for his assumption that the psychical was generated out of the physical, and that there is no ontological difference between thoughts and things without specifying or even hypothesizing about the mechanics which might engender such transformations (see James, 1904/1967a, pp. 34-36).

with the "Newtonian" strand.[9] In his radical empiricism, James is experimenting with the idea that a 'return' to pure experience as the starting point for metaphysics will allow him to derive a psychology of mind which is independent of the constraints traditionally imposed by physics. The sciences are to be taken as products of the experiencing mind and James' view of science now tends to be relativistic rather than absolute. The primary and secondary qualities distinction can therefore be treated as a piece of 'scientific legislation'.

Psychologically, as the older empiricists recognized, the individual makes no distinction between the primary and secondary qualities of an object:

> The shifting place of 'secondary qualities' in the history of philosophy is another excellent proof of the fact that 'inner' and 'outer' are not coefficients with which experiences come to us aboriginally stamped, but are rather results of a later classification performed by us for particular needs. The common-sense stage of thought is a perfectly definite practical halting-place, the place where we ourselves can proceed to act unhesitatingly (James, 1905/1967c, p. 146).

The need to separate these qualities arose from intellectual, not practical, needs, and the intellectual need to make the separation appears to arise as a result of the practical successes of holding them initially together:

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9. This has already been discussed in Chaps. 4 and 7. It should be noted that the radical empiricism essays were published (1904-1905) before the majority of the pragmatic writings (1885, 1895, 1904-1909) so that James' 'resolution' of the primary-secondary qualities distinction is not to be taken as a resolution of the opposing strands of the pragmatic writings themselves. Instead, the writings on radical empiricism 'verify' the existence of a relativistic strand in the pragmatism. That the radical empiricist 'solution' was not without problems is perhaps confirmed by the fact that the pragmatic view of scientific progress is not completely relativistic or evolutionary. The relationship between radical empiricism and pragmatism is discussed below.

> By engendering and translocating just these qualities, actively efficacious as they seem to be, we ourselves succeed in altering nature so as to suit us; and until more purely intellectual, as distinguished from practical, needs had arisen, no one ever thought of calling these qualities subjective. When, however, Galileo, Descartes, and others found it best for philosophic purposes to class sound, heat, and light along with pain and pleasure as purely mental phemonema, they could do so with impunity (James, 1905/1967c, p. 147).

The separations can be made with impunity because of the essentially plastic nature of 'pure experience', and the separations are themselves artifacts:

> Even the primary qualities are undergoing the same fate. Hardness and softness are effects on us of atomic interactions, and the atoms themselves are neither hard nor soft, nor solid nor liquid. Size and shape are deemed subjective by Kantians; time itself is subjective according to many philosophers; and even the activity and causal efficacy which lingered in physics long after secondary qualities were banished are now treated as illusory projections outwards of phenomena of our own consciousness. There are no activities or effects in nature, for the most intellectual contemporary school of physical speculation. Nature exhibits only changes, which habitually coincide with one another so that their habits are describable in simple 'laws' (James, 1905/1967c, pp. 147-148).

James echoes Hume when he says that causal efficacy and activity are illusory projections of our minds onto nature. But where such conclusions lead Hume to skepticism, James uses them to strengthen his pure experience hypothesis. Science operates by imposing selected operations and distinctions upon a seemingly 'independent' natural world. James recognizes that the primary and secondary qualities doctrine was a piece of scientific legislation, and that its contents are subject to change as the science it inspired develops. The fact that the doctrine was so successful and at the same time that its efficacy could decrease as a function of the development of the science it set in motion gives James grounds for a relativistic treatment of science and for emphasizing the importance of human experience on the one hand, and the 'independence' of nature on the other. Yet there is a compatibility between the two: nature exhibits "changes which

habitually coincide"(James, 1905/1967c, p. 148), and we perceive these coincident changes and designate them as laws. This is the climax of James' assertion that human consciousness lies at the centre of the evolving universe. Science grows out of the cuts and selections men make in pure experience, and science is always selective and therefore subordinate, in James' thinking, to the whole of experience and more particularly, to the selective consciousness.

As he perceives that scientific theories are not absolute descriptions of nature and are therefore potentially fallible, and as he now tends to 'subjectify' even the primary qualities, James is led closer to his final conception of a pluralistic universe, wherein pluralism is a fact of the universe itself. James is now replacing the moral argument for a pluralistic universe (as given in The will to believe) with a metaphysical claim that pluralism is the fundamental principle of the universe. The particular view of science and its relationship to events in the physical world is used as evidence for James' hypothesis that intuitively, there is no immediate discrimination made between objects and the formulations we impose upon them to describe their behaviour. Nature appears to act according to laws so that it intuitively appears that the law is an objective property of nature. James (following Hume) argues that this is not the case, and he therefore emphasizes that nature exhibits only changes (see James, 1905/1967c, pp. 147-148). Within certain physical limits we select the changes that appear to coincide and give these the status of laws. At the same time, we necessarily ignore other manifestations present in the same field of nature. If, correspondingly, scientific explanations are subject to change, then it can be argued that nature is to that extent independent and pluralistic because it lends itself

to any schema we might devise for it.

James' first great break with British empiricism was the establishment of 'pure experience' as preceding the subject-object distinction. His second break comes with his proclamation that "the relations that connect experience must themselves be experienced relations, and any kind of relation experienced must be accounted as 'real' as anything else in the system" (James, 1904/1967b, p. 42). James' concept of the relations was an integral part of the pure experience philosophy; the relations provide the connections between the parts of pure experience, which includes consciousness and any and all objects which that consciousness is eventually said to know. It is James' particular use of the relations as real existants in the concrete world, and in consciousness, which allows him to make experience antecendent to the subject-object distinction.

The Relations

James begins his essay "A world of pure experience" with the declaration that his empiricism is a radical empiricism because it demands that relations between experiences be considered as real as the objects themselves and he thereby makes his most important break with Hume (see James, 1904/1967b, p. 42). James is delivered from Hume's skepticism because he is now able to extend the scope of his realist hypothesis. He writes that traditional empiricism, exemplified by the writings of Berkeley, Hume, and the Mills "has always shown a tendency to do away with the connections of things, and to insist most on the disjunctions" (James, 1904/1967b, p. 43). Consequently, the older empiricists and rationalists found it necessary to add "transexperiential agents of unification" (James, 1904/1967b, p. 43), to their world-view in order to make it coherent. For James,

the inclusion of conjunctive relations as real aspects of experience does away with the need to seek any higher unifying agency because the conjunctive relations provide the essential links between experiences at any level. If he can make a convincing case for the inclusion of conjunctive relations as real properties of the physical world, James will be able to replace transempirical agents with real observables and this will give him the advantage of having all that is necessary for knowledge available in the sensible world itself. James will then have firm grounds for exhorting philosophers and scientists to return to the direct study of the physical world, and he will also be able to justify his limiting of philosophy to the study of experienceable events.

The conjunctive relations in order of their 'degree of intimacy' are: 1) "merely to be 'with' one another in a universe of discourse" (James, 1904/1967b, p. 44)--this relation is described as "the most external relation that terms can have and seems to involve nothing whatever as to farther consequences" (James, 1904/1967b, p. 44); 2) simultaneity and time-interval; 3) space-adjacency and distance; 4) similarity and difference--these carry "the possibility of many inferences" (James, 1904/1967b, p. 44); 5) activity--these relations tie terms "into series involving change, tendency, resistance, and the causal order generally" (James, 1904/1967b, pp. 44-45); and 6) relations:

> experienced between terms that form states of mind, and are immediately conscious of continuing each other. The organization of the Self as a system of memories, purposes, strivings, fulfilments or disappointments, is incidental to this most intimate of all relations, the terms of which seem in many cases actually to compenétrate and suffuse each other's being (James, 1904/1967b, p. 45).

No single one of these 'sets of relations' is sufficient in itself to connect all the experiences that make up the universe. Therefore

the universe appears to be chaotic because the intimacy between the parts is not perfect:

> No single type of connection runs through all the experiences that compose it. If we take space-relations, they fail to connect minds into any regular system. Causes and purposes obtain only among special series of facts. The self-relation seems extremely limited and does not link two different selves together (James, 1904/1967b, p. 46).

James writes that this lack of unity or 'disjunction' between things had caused the British Empiricists to overemphasize the 'lack of unity' between events (see James, 1904/1967b, p. 46). Radical empiricism, he says, treats both conjunction and disjunction as real while stressing "that there appear to be actual forces at work which tend, as time goes on, to make the unity greater" (James, 1904/1967b, p. 47).

The most important, and the most troublesome conjunctive relation, according to James, "is the co-conscious transition, so to call it, by which one experience passes into another when both belong to the same self" (James, 1904/1967b, p. 47). James seeks a solution to this difficulty by making personal consciousness an experienced continuity, so that even changes in consciousness are experienced as part of the continuity of consciousness as consciousness passes from event to event. By making the experience of continuity the means of affirming real continuity, James gets rid of the problem of finding a transcendental means of unifying the self. Further, the same continuous consciousness can have experiences of both continuity and discontinuity without any 'gaps' in its essential unity. Disjunction, then, becomes merely another kind of experience.

James refers to the structure of the stream of consciousness as the basis for the proposition that the personal consciousness exhibits relations of continuity, and that continuity describes changes

or breaks in the flow of mental events (see James, 1904/1967b, p. 48, where James makes this explicit). But in order to tie the 'external' and 'internal' relations together James must again confront the problem of the 'knower' and the 'known'. He writes that radical empiricism's greatest advantage is in saving us from "an artificial conception of the relations between knower and known" (James, 1904/1967b, p. 52), and he summarizes the traditional subject-object problem as follows:

> Throughout the history of philosophy the subject and its object have been treated as absolutely discontinuous entities; and thereupon the presence of the latter to the former, or the 'apprehension' by the former of the latter, has assumed a paradoxical character which all sorts of theories had to be invented to overcome. Representative theories put a mental 'representation', 'image', or 'content' into the gap, as a sort of intermediary. Common-sense theories left the gap untouched, declaring our mind able to clear it by a self-transcending leap. Transcendentalist theories left it impossible to traverse by finite knowers, and brought an Absolute in to perform the saltatory act (James, 1904/1967b, pp. 52-53).

James believes that he has solved the problem with his conception that the "knower and the known are: 1) the self-same piece of experience taken twice over in different contexts"(James, 1904/1967b, p. 53). This refers to perception, where "the mind enjoys direct 'acquaintance' with a present object" (James, 1904/1967b, p. 54). The relations between the mental and physical aspects of any piece of experience have already been described above (see James, 1904/1967a, pp. 9-10, 12, 14-15; quoted respectively above, pp. 569-570). In addition, the knower and the known may be:

> (2) two pieces of actual experience belonging to the same subject, with definite tracts of conjunctive transitional experience between them; or
>
> (3) the known is a possible experience either of that subject or another, to which the said conjunctive transitions would lead, if sufficiently prolonged (James, 1904/1967b, p. 53).

James states that condition (3) can always be 'formally' and

'hypothetically' reduced to condition (2) and that one demonstration will suffice to describe them both (see James, 1904/1967b, p. 54). Conditions (2) and (3) refer to conceptual knowledge but in this context, James is speaking only of the knowing of a percept by an idea. An idea is cognizant of reality if it is capable of leading the individual into the presence of the cognized object. If James' 'idea' of Memorial Hall is capable of leading him to the actual Hall, then his idea of the Hall can be said to be cognizant of the real Hall. The process wherein an idea actually leads one to the desire object consists of the series of 'felt-transitions'. Our experience of the felt-transitions comprises the ambulatory process whereby an idea brings us into touch with reality. We identify that reality as the object of our idea and this identification includes "all that the knowing of a percept by an idea can possibly contain or signify" (James, 1904/1967b, p. 56; see also pp. 54-55). The 'extremes' between the idea and the object are connected by a series of 'relations' that connect the whole universe of experience. James can then say that:

> Knowlege of sensible realities thus comes to life inside the tissue of experience. It is made; and made by relations that unroll themselves in time. Whenever certain intermediaries are given, such that, as they develop towards their terminus, there is experience from point to point of one direction followed, and finally of one process fulfilled, the result is that their starting-point thereby becomes a knower and their terminus an object meant or known. That is all that knowing (in the simple case considered) can be known-as, that is the whole of its nature, put into experiential terms (James, 1904/1967b, p. 57).[10]

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10. Note the similarity of this statement to James' earliest hypothesis regarding the manufacture of knowledge in his paper "Remarks on Spencer's definition of mind as correspondence" (see James, 1878/1920, p. 67). He has now replaced the teleological standpoint with a metaphysical argument to come to the same basic conclusion--that is, that knowledge is made by the mind interacting with 'experience' or 'physical reality'.

The significance of this statement is that percepts not only serve as verifications of conceptions, "but the percept's existence as the terminus of the chain of intermediaries creates the function. Whatever terminates that chain was, because it now proves itself to be, what the concept 'had in mind'" (James, 1904/1967b, p. 61). But here James takes another leap when he uses this conclusion to argue against the need for a representative theory of perception:

> an experience that knows another can figure as its representative not in any quasi-miraculous 'epistemological' sense, but in the definite practical sense of being its substitute in various operations, sometimes physical and sometimes mental, which lead us to its associates and results. By experimenting on our ideas of reality, we may save ourselves the trouble of experimenting on the real experiences which they severally mean. The ideas form related systems, corresponding point for point to the systems which the realities form; and by letting an ideal term call up its associates systematically, we may be led to a terminus which the corresponding real term would have led to in case we had operated on the real world (James, 1904/1967b, p. 61).

This is a big leap because James is at last stating that the mental world contains related systems that actually correspond point by point to the systems in the external world.[11] So far, in his philosophy and psychology, James has been unwilling to go as far as this in constructing a parallel between conception and the perception of actual objects and has held the various levels of reality apart. Though he says that 'actually' knowing anything remains in doubt

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11. The rationalist overtones should be noted. We have already discussed James' tendencies towards rationalism regarding scientific verifications and we have also looked at his pragmatic conception of potential truths which are treated as real truths by individuals. James is asserting here that the correspondence between the mind and the physical world is sufficiently close to allow mental verifications to substitute for perceptual verifications. As James extends the principles which were originally used to describe the mind to include the physical world, the need for perceptual verification decreases. At the same time, his insistence that the sensible world is temporal and mutable leads him to emphasize the need for perceptual verification in other parts of his work. The conflict between James' rationalist, idealist tendencies and his empiricist, realist construction is never satisfactorily resolved in his work.

until perceptual verification takes place he does say that "We were virtual knowers of the Hall long before we were certified to have been actual knowers, by the percept's retroactive validating power" (James, 1904/1967b, p. 36).[12] In the interest of using the relations as a means of holding experience together through the whole range of its manifestations in the concrete physical world and finally in man's abstract conceptual world, James makes his theory of knowledge more passive and less ambulatory than it appeared in the Principles and will appear in pragmatism. Knowledge becomes an almost passive process governed by "relations that unroll themselves in time" (James, 1904/1967b, p. 57).

This view of knowledge rests on the earlier concept of ideo-motor action which James has now translated into metaphysics. Ideo-motor actions are based on the 'experiences' of the individual, built up through his interaction with reality. It is only within such a psychological schema that James can uphold the idea that such precise knowledge virtually exists before perception actually takes place. In his later pragmatism, James will stress the active, ambulatory side of the process which is necessary to ensure confidence in the potential or 'virtually' knowable outcomes of any experience. For now, James is developing a conception of the universe where the physical and mental aspects of experience are simply parts of the same experience. To this extent, they must be in agreement. James is trying to preserve a realist account of the physical world and he tries to guarantee that such a world exists with the concept of virtual knowledge.

The problem of error intrudes here; James is quite aware that all

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12. This kind of 'virtual' knowledge is included in James' pragmatic theory of truth, so that the store of 'unverified' truths is almost as important as the store of verified truths in facilitating adaptive actions. Pragmatic epistemology is therefore based on the metaphysic of radical empiricism.

of our ideas are not true of the physical world--their content may preclude verification, or the external world may not contain the sought-after object at all. At the same time, the concrete world may contain objects or relations which we are incapable of discovering in perception. It appears the the 'fit' between the mental and physical worlds depends on the intersection between the sentient actor and the concrete object. We are virtual knowers of Memorial Hall only if the Hall exists and our ideas about it are of such a nature as to lead us, through the series of felt transitions, into an actual percept of the Hall. If we do not get the percept, either the Hall does not exist, or our ideas about how it exists are false. The virtual relationship between the mental and physical aspects of experience includes only those experiences which can be verified so that epistemologically, the potential for error is still there.

In the stage preceding any attempt at verification the only 'given' is the state of experience itself and this experience is 'true' simply by virtue of the fact that it exists. This applies to perceptual and conceptual experience so that any experience is as 'real' as any other. James is using truth in two ways here: on the one hand, truth is simply another name for the process of experience. On the other, truth refers to the act of verification where two parts of the same experience collide and the sentient experient conceives of himself as the knower of the object. The point is that the terms 'truth' and 'falsity' have no real meanings within the context of pure experience itself. They have only retroactive significance. It is only when experience is separated into knower and known that questions about the 'fit' between ideas and objects can be asked and answered. Perception, in this sense, precedes the division of experience into subject and object. As James postulates that nothing intervenes between the physical object and the mind that 'knows' it he is confident that pure experience itself, which includes the

relations that tie its parts together, provides a guarantee for knowledge.

This is the foundation for a guaranteed knowledge of the universe and it is basic because James has never been able to rely on permanent possibilities of sensation; the stress in the Principles is on the psychological means used to bring us into real relationships with a phenomenally plastic universe. James employs the subject-object distinction at the primary level in his psychology in order to maintain the unity of the thought in consciousness. The problem is then to determine what the mind could 'know' about the physical world, independently of its own necessarily subjective perspective. While the Principles contains many examples of 'certain' knowledge, these 'certainties' are products of the coercion of the mind by the sensible properties of objects, and the subject-object barrier is broken down by the strong qualities of objects working on a sense/mind conglomerate which is structured to receive them. Radical empiricism by contrast essentially makes the world directly 'knowable' and James can use time as the medium for the unfolding of relations.

The need for specific verification shrinks as the external world is organized into specific relations between events and as the mind and world are developed as aspects of the same universe of experience. Wild comments:

> As he has suggested in his pragmatic theory of knowledge, a thought first anticipates a perception of some kind, and then embarks on a procedure of discovery to see if it can be found. If, by gradual transitions, this procedure finally leads to the experience exactly as it was anticipated, then the theory, or anticipation was true. But in this relational experience or fulfillment, no epistemological chasm between a mind thing and a physical thing has to be bridged. The whole procedure occurs within the experienced world. ...The perception (pure experience) is simply there. As it comes before us "in its

passing", it "is always truth" (Wild, 1969, p. 364).

Because no 'epistemological chasm' remains to be breached, James now places the emphasis on the process of experience itself rather than on any definite perceptual or conceptual 'resting-place' as he will do in his pragmatism. He writes that most of our knowing is 'virtual' knowing and stresses that we hold many ideas that we do not bother to verify, but simply believe because nothing overtly contradicts them:

> To continue thinking unchallenged is, ninety-nine times out of a hundred, our practical substitute for knowing in the completed sense. As each experience runs by cognitive transition into the next one, and we nowhere feel a collision with what we elsewhere count as truth or fact, we commit ourselves to the current as if the port were sure (James, 1904/1967b, p. 69).

James emphasized the 'felt transition' between the 'parts' of any experience so that:

> Our experience, inter alia, is of variations of rate and of direction, and lives in these transitions more than in the journey's end. The experiences of tendency are sufficient to act upon--what more could we have done at those moments even if the later verification comes complete?(James, 1904/1967b, p. 69).

James feels certain that he takes care of the potential criticism that he is content with a substitute for knowledge when genuine knowledge is possible "by first making knowledge to consist in external relations ...and by then confessing that nine-tenths of the time these are not actually but only virtually there" (James, 1904/1967b, pp. 71-72), and he then appeals back to his notion of pure experience:

> The instant field of the present is always experience in its 'pure' state, plain unqualified actuality, a simple that, as yet undifferentiated into thing and thought, and only virtually classifiable as objective fact or as some one's opinion about fact. This is as true when the field is conceptual as when it is perceptual. 'Memorial Hall' is 'there' in my ideas as much as when I stand before it. I proceed to act on its account in either case. Only in the later experience that supersedes the present one is this naif immediacy retrospectively split into two parts, a 'consciousness' and its 'content', and the content corrected or confirmed. While still pure, or present, any experience--mine,

> for example, of what I write about in these very lines--passes for 'truth'. The morrow may reduce it to 'opinion' (James, 1904/1967b, pp. 74-75).

James' intention obviously was to retain the notion of a functional consciousness which actively generates knowledge in the world. He maintains that the Absolutist position is just as liable to undergo a reduction from truth to opinion at any given time as his radical empiricism is:

> Why insist that knowing is a static relation out of time when it practically seems so much a function of our active life? For a thing to be valid, says Lotze, is the same as to make itself valid. When the whole universe seems only to be making itself valid and to be still incomplete (else why its ceaseless changing?) why, of all things, should knowing be exempt? Why should it not be making itself valid like everything else? That some parts of it may be already valid or verified beyond dispute, the empirical philosopher, of course, like any one else, may always hope (James, 1904/1967b, pp. 75-76).

James is using radical empiricism to <u>support</u> a temporal, mutable view of the universe. His goal is to show that conscious processes and the workings of the greater mass of experience are integrated experiences which unroll themselves in time together. But this brings problems: James emphasizes that the subject-object distinction must still be made. The necessity of having verification procedures to confirm the solid existence of other parts of experience undermines the concept of pure experience. If every event accessible to human experience is contained within pure experience, the need for verification becomes a secondary process--a confirmation of what is already given in the state of pure experience. But James believes that the subject-object distinction must still be made if <u>pure experience</u> is to be translated into actual knowledge about the world. And from a psychological viewpoint, verification is necessary to ensure the personal continuity of the stream of consciousness and to account for the fact that conception leaves the train of perceptual input at some point and becomes subjective. At

the same time, James must find a way to show that there is a real basis for perception in order to guarantee his realist view of the concrete world. In other words, he needs a common world. The abstract or necessary truths will not fill the demand because they make only a partial fit with the concrete world, and cannot describe its vagaries: they are definitionally opposed to the description of mutability and temporalism. James' psychology and philosophy demands that the connection between minds be made at the perceptual level because of the evolutionary basis of consciousness, and the corresponding philosophical demand that minds must be capable of intersection at concrete places. The concept of a world of pure experience, bound together by the relations, rests upon the possibility that two minds can know the same object.

Two Minds Can Know One Thing

If James was to make good his claim that: "Radical empiricism has, in fact, more affinities with natural realism than with the views of Berkeley or of Mill" (James, 1904/1967b, p. 76), it was necessary for him to show that two minds could know one thing, and that the thing known in common was an object of perception. There were good reasons for choosing perceptions as the meeting points for minds. First, such a view can remain neutral in terms of subscribing to any particular underlying basis for the reality perceived. In the Principles James argued that the universe appeared to actually have an atomic structure and to 'work' according to various universal laws not intuitively perceivable. In his pragmatism, however, he would argue that these presumed underlying bases of reality were products of the intellect and the necessary truths; they were secondarily imposed on the physical world, were subject to change and were based in part on the results of

experience. They were not primary. Second, centering the 'commonality' of experience in perception gave James the advantage that while the same object might give rise to individual variations in perception, the object still 'projects' enough common elements to ensure inter-subject agreement. But third and most crucial, the meeting of minds at the perceptual level is congruent with the evolutionary premises that run through the whole of James' psychology and philosophy.

According to James, perception constitutes our closest cognitive relationship with physical reality. James selects the sensible world as the sphere of reality where all ideas are finally verified; this is a 'common-sense' selection because James shows in his psychology that it is the one level where we do not doubt that the objects have an independent existence from our thoughts about them. All philosophies demand some ultimately common world of truth or reality. The perceptual world is the obvious choice in an evolutionary-based functional psychology because survival depends on the success of our adaptations to the pressures of the physical world. And if our physical and mental faculties are products of evolution (and James believed that they were: see James, 1904/1967a, pp. 35-36; 1905/1967a, p. 97), this implies that at some level at least, a common sensible world must exist for the species. Fundamentally, men must interpret external events in substantially similar ways. If we confront the tiger in the forest we must recognize that the tiger is a dangerous object; in this way the object's primary qualities become of secondary importance when the functional aspects of perception are emphasized. Perceptions (as opposed to sensations) give us not only the sense-data required to 'separate' the object from the 'experience-mass' that confronts us in any sensational situation, but perceptions also include the affectional facts which give us the 'meaning' of the object. These considerations made

James' break with traditional empiricism almost inevitable and he wrote:

> For the Berkeleyan school, ideas (the verbal equivalent of what I term experiences) are discontinuous. The content of each is wholly immanent, and there are no transitions with which they are consubstantial and through which their beings may unite. Your Memorial Hall and mine, even when both are percepts, are wholly out of connection with each other. Our lives are a congeries of solipsisms, out of which in strict logic only a God could compose a universe even of discourse. No dynamic currents run between my objects and your objects. Never can our minds meet in the same.
>
> The incredibility of such a philosophy is flagrant. It is 'cold, strained and unnatural' in a supreme degree; and it may be doubted whether even Berkeley himself, who took it so religiously, really believed, when walking through the streets of London, that his spirit and the spirits of his fellow wayfarers had absolutely different towns in view (James, 1904/1967b, pp. 76-77).

Berkeley's position is less incomprehensible than James presents it when it is put in context with the view of nature which predominated in Berkeley's time. Marcell describes that view as follows:

> The structure of nature did not vary. Each category and each entity in creation had its origin in the divine blueprint used to construct the universe. That blueprint was infinitely complex, highly integrated, and rigidly economical. Nature allowed no redundancies or duplications. The variety of types within creation was deliberate, sufficient, and constant. Each entity's characteristics bore the indelible imprimatur of the creator, which located it in the so-called great chain of being, the familiar eighteenth-century metaphor for nature's organization of life. The possibility of a species of plant or animal becoming extinct or evolving out of earlier forms conflicted with the assumption of special creation underlying the great chain of being, and consequently an evolutionary view of nature eluded eighteenth-century thinkers. Change in time was real, but it was developmental, not structural. Sports and mutants were known to have occurred and survived, but they did not imply continuing, creative evolution. Nature was hierarchical, not organic: "the generally accepted idea of a Great Chain of Being implied that anything which did not form a part of an existing species would find no room for itself on a ladder of nature, all of whose rungs were already occupied" (Marcell, 1974, p. 55).[13]

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13. Although Marcel refers to eighteenth-century American ideas of stability and the great chain of being, his words apply equally well to the British situation (see Lovejoy, 1936/1965, Chaps. 8 and 9 for an extended analysis of these concepts).

The possibilities of perception are guaranteed in this view of the cosmos because the universe is connected through the extra-experiential existence of God. God is responsible for the connections and disjunctions of objects and these relations therefore exist 'beyond' nature as the means of cause and effect; they cannot be conceived of as essential parts within nature. Thus, all that can exist to be perceived are the perceptions themselves. The goal of man was to discover the eternal, fixed, 'discoverable' and stable laws of the universe, and because these laws existed 'beyond' perception, agreement at the perceptual level was irrelevant.[14] Because the possibilities for perception were regarded as permanent, there was no particular need to study them in terms of inter-observer reliability. And if physical objects were perceived to be sensibly discontinuous, then the common world must be sought at the higher intellectual ranges: agreement on universal laws was crucial. Given this world-view, it was logical for Berkeley to conclude that percepts are not shared. It is difficult, in any event, to determine exactly what can be said to be shared in any given percept; there is a tension between the stress placed upon so-called 'common' elements, and the 'distinct' or 'individual' features of any given event.

James' attempt to show that we do have percepts in common was fraught with problems, and has not escaped criticism (see Ayer, 1968, pp. 228-256, for example). Briefly, Ayer argues that James' theory of intersecting biographies conflicts with his theory of personal identity. Moreover, James' claim that we can infer that two people share

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14. Agreement was still guaranteed by God as the ground for perception and it remained relevant for practical life. This explains why Berkeley identified his view with common-sense realism, confusing the criterion for physical reality with its meaning. It is also worth noting that James made a similar confusion between criterion and meaning in his pragmatism (see Chap. 7, pp. 531-535).

a common percept by analyzing their behaviour is disputable. James seeks to solve the problem by stating that we have physical space in common and Ayer concurs with this, but makes the distinction between common space, and the imputation that because we can locate the same object in space, we necessarily share the same percept of the object.

James' arguments for the existence of shared percepts are based on his inferences about the existence of other minds--he assumes that other minds exist on the basis of his perceptions of the bodily activities of other individuals (see James, 1904/1967b, p. 77). Furthermore, the bodily activities of other individuals alter the objects in James' perceptual world and:

> It is only as altering my objects that I guess you to exist. If your objects do not coalesce with my objects, if they be not identically where mine are, they must be proved to be positively somewhere else. But no other location can be assigned for them, so their place must be what it seems to be, the same.
>
> Practically, then, our minds meet in a world of objects which they share in common, which would still be there, if one or several of the minds were destroyed (James, 1904/1967b, p. 77).

The substance of James' natural realism is to be found in this common world of objects, and the means whereby these common objects are 'known' by several minds at once is derived from James' concept of pure experience. James extends the definition of pure experience so that the same piece of experience may figure simultaneously in many different contexts if it can figure simultaneously in the two that denote the knower and the known (see James, 1904/1967b, p. 80). But James realizes that natural realism cannot be fully supported through the insistence that percepts are held in common. James may have the basis for a 'common-sense' realism consisting of shared <u>objects</u> which can be deduced from behavioural evidence, but the problem still remains as to whether <u>percepts</u> themselves are actually held in common. James

writes that the problem is empirical and that in fact, we do not have the same percept of the common object (see James, 1904/1967b, p. 82). He makes this assertion because he insists that individual consciousnesses are unique. Once we 'have' a percept, we continue to have more percepts, and eventually we have concepts which are unique virtual knowers of reality. Our minds are not 'conterminious' in any real sense (see James, 1904/1967b, p. 83), and James must now find some means of showing that our percepts have common elements. He concludes that their mere co-joining in space may be sufficient:

> In general terms, then, whatever differing contents our minds may eventually fill a place with, the place itself is a numerically identical content of the two minds, a piece of common property in which, through which, and over which they join. The receptacle of certain of our experiences being thus common, the experiences themselves might some day become common also. If that day ever did come, our thoughts would terminate in a complete empirical identity, there would be an end, so far as those experiences went, to our discussions about truth. No points of difference appearing, they would have to count as the same (James, 1904/1967b, pp. 85-86).

James' notion of the space common to two minds at once is based on the empirically derived conclusion that we commonly identify the objects of our percepts to be in the same place--that is, we point to the same spot when we are asked to identify a common object. Moreover, the sensations of the body are used to indicate common locations--you feel my touch from the 'inside' at the same point that I feel it from the 'outside' (see James, 1904/1967b, pp. 84-85). In this way, common space is determined through perceptual and sensational modes of experience. With this meeting of percepts through spatial relations, James felt that he had shown that radical empiricism is congruent with natural realism and that there is a 'natural' basis for his epistemology. This, for James, concludes the structure of his metaphysics: the rest of his radical empiricist essays are devoted to working out his system in more detail through amplification of the roles of the relations, of

the ways two minds can know the same thing, of the roles of the affectional facts, and of experience of activity.

So far, we have looked briefly at some of the historical problems James tried to solve, and the doctrines he devised to come to terms with them. It is now time to look at radical empiricism in a more critical light to try and determine whether or not it provides a coherent metaphysical basis for James' epistemology, and whether the epistemological advances James was simultaneously making in his pragmatism can be fitted into the metaphysics of radical empiricism. We must also look at James' tendencies towards subjectivity and idealism balanced against his proclamations of realism, and determine whether he preserved both the functional nature of thought and the independence of objects in the external world.

Problems with Radical Empiricism

The concept of 'pure experience' figures in all of James' works. In the Principles it describes the first experiences of the aboriginal world before the interaction between feelings and concrete events separates it into 'known' and 'knowing' parts. At the same time as the individual is separating events outside himself, feelings are differentiated into percepts, concepts, sensations, emotions, volitions, etc. The concept of pure experience is used psychologically in the Principles; it describes the first sensational relationships the individual participates in, and allows James to develop a selective view of consciousness based on the developmental process (see James, 1890, 1, p. 488). But in the Essays in radical empiricism, 'pure experience' is expanded to include sophisticated experience and is used as the base for James' hypothesis that thoughts and things really are ontologically equivalent.

And this hypothesis is problematic: until the development of

radical empiricism, James' philosophy has been intentionally dualistic. His professed dissatisfaction with this dualism and his appeals to positivism as the pragmatic rationale for making use of the dualism in no way make his philosophy any less dualistic. Thus, the explicit ontological equivalence between thoughts and things that defines James' radical empiricism raises questions about how well James' preceding work fits in with the new doctrine. His psychology is built on the existing tension between mind and the external world. The function of mind is to know and thus act on the physical world and the pragmatic motif runs throughout the Principles: verification is an active process and the discovery of the confirming percepts is crucial because the external world is not immediately or intuitively organized for the observer. But with the advent of radical empiricism, the tension disappears--mind and object are no longer structurally opposed: they are simply aspects of the same, ultimately closed, universe of experience.

The first major problem is to determine whether Fite's criticism that James' conception of experience was necessarily subjective is valid (see Perry, 1935/1974, 2, p. 341, quoted above, p. 571). James believed that everything that could be experienced was necessarily part of the 'stuff' of pure experience. Anything that could not be experienced was, by definition, excluded from the stuff of pure experience.[15] Furthermore, James postulated that an object could be said to continue to exist in the absence of an observer because it had actually been experienced.[16] But this approach comes very close to subjectivism:

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15. Kuklick points out that James had to make this distinction to support his realism and to avoid constructing another form of the absolute block universe (see Kuklick, 1977, p. 324).

16. As Kuklick points out, James had the second alternative of granting existence to potential experiences; Kuklick claims that James did not seriously develop this approach because it could be too easily transformed into rationalism (see Kuklick, 1977, p. 325).

'reality' can only be granted to those objects which have been experienced at some time by some sentient being. The postulate 'protects' James' intention to develop a realist conception of the physical world and it correlates with empiricism, but it also confounds 'existence' with 'knowledge'. Furthermore, the granting of existence to any particular object would also appear to depend upon the recognition of the observer that the object was real--that is, objects are granted independent existence at the point when the piece of pure experience is 'functionally' divided into knower and known by the observer. If the observer fails to make the distinction, a 'state' of pure experience would logically appear to continue for both the potential subject and object.

This leads into the second aspect of the problem: what happens to the object--what status does it have--when it ceases to be in the presence of a sentient observer? As Kuklick shows, James grappled somewhat unsuccessfully with the problem, and it was here that he found panpsychism exerting its strongest appeal (see Kuklick, 1977, pp. 324-325). Panpsychism was an appealing way out of the quandry because according to that doctrine, each object, 'sentient' or not, had its own experience of itself. But this 'experience' was necessarily different from the experience of the 'sentient' observer and at any rate, the attribution of 'self-experience' to inanimate objects would bring James perilously close to the mind-dust theory that he had rejected so many years before. The best he could do was to describe objects in terms of space-time relationships so that each object could be given an 'independent' biography as a guarantee of its existence (see James, 1904/1967a, pp. 20-22). This solution, however, is still subjectively oriented for the space-time relationships themselves make up a portion of pure experience, and therefore require 'recognition' by sentient

observers. As Kuklick states, James never really did resolve the problem of the form in which objects continued to exist apart from the impositions made upon them by observers.[17]

Whether or not James actually succeeded in vanquishing the traditional ontological dualism between thoughts and things is another serious question. Lovejoy comments on the difficulties of making the switch from dualism--and any dualistic approach brings in its wake a long philosophical history--to James' neutral monism, and concludes that James' legislation that "one thing may without contradiction be a member of two or more classes" (Lovejoy, 1930/1960, p. 57), is an insufficient postulate to refute dualism, including James' own as it appears in the Principles:

> Nothing could illustrate better than James' belief in the pertinency and efficacy of this short and easy method for disposing of dualism how little the true grounds of that hypothesis were kept in view twenty-five years ago, even by the ablest of those who then set about the establishment of an alternative form of realistic philosophy. It has, I trust, been made sufficiently evident in the preceding lecture that neither the thesis of the non-identity of perceptual content and cognoscendum, nor that of the non-physicality of content, rests upon arguments so simple and slight that they can be dissipiated merely by bringing to mind the logical truism that a thing may without contradiction belong to two classes. Few philosophers can have been unaware of this possibility. But from the general possibility you cannot infer the particular fact. We may always entertain, in advance of inquiry, the hypothesis that a thing known to have certain properties or relations, abc, may be numerically identical with a thing which is otherwise known to have certain other properties, xyz. And the whole point of the argument for the two sorts of dualism lies in the contention that the experienced properties and relations of the datum are, in certain specific respects, incompatible with those assumed to belong to the particular

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17. (See Kuklick, 1977, p. 326). James' radical empiricism may seem superficially similar to Berkeley's subjective idealism, which also equates existence and experience. The difference between them is highlighted by this problem of the status of objects when not actually being perceived. For Berkeley the problem was not serious, since the omnipresent Mind of God kept the objects in view, and kept their relationships in order, independent of any specific human perception. God, in Berkeley's theory, thus provides the extra-experiential ground and glue of perceptions. It was just any such extra-experiential factors that James was determined to exclude.

> cognoscendum, and are also incompatible with the defining properties of the class of "physical objects". I shall not again repeat these arguments; but it is evident that the dualist's premises could be relevantly and effectually attacked only by examining, point by point, the specific differences asserted by him to subsist between perceptual content and physical object, and proving each of them separately to be a difference which does not exclude existential identity (Lovejoy, 1930/1960, pp. 57-58).

In short, James fails to show that the differences exhibited by the 'physical' room and the room of our perception are not fundamental to the real identity of each. As Lovejoy points out, James was endeavouring to get round the problems of the representative theory of perception which states that the physical object and the mental image of it constitute two distinct realities (see Lovejoy, 1930/1960, p. 56). The object in the mind is related somehow to the physical event which accounts for our knowledge of reality. For James, perception seemed to be immediate, without any intervening image; therefore he argued that "The puzzle of how the one identical room can be in two places is at bottom just the puzzle of how one identical point can be on two lines. It can, if it be situated at their intersection" (James, 1904/1967a, p. 12; see also Lovejoy, 1930/1960, pp. 56-57 for an expanded version of these points).

The problem with this analysis, as Lovejoy demonstrates, is that James does not go on to develop the set of relations that would make it possible for us to conceive of the relation of mental and physical events as intersecting parts of experience analogous to his example of the two lines. The problem of how one point can be on two lines at once is covered by the spatial relations, constructs, and definitions within the science of geometry. If we know what these relations are, and agree with their logical consistency as a system, there is no paradox involved in the premise that the two lines simultaneously occupy one point. James feels it is sufficient to say that the 'room'

as a piece of experience:

> is a member of diverse processes that can be followed away from it along entirely different lines. The one self-identical thing has so many relations to the rest of experience that you can take it in disparate contexts. In one of these contexts it is your 'field of consciousness'; in another it is 'the room in which you sit', and it enters both contexts in its wholeness, giving no pretext for being said to attach itself to consciousness by one of its parts or aspects, and to outer reality by another. What are the two processes, now, into which the room-experience simultaneously enters in this way (James, 1904/1967a, pp. 12-13).

James then describes the two processes the 'room-experience' participates in: the 'room-experience' exists simultaneously as a piece of the 'real' world and as such includes "the history of the house of which the room is a part" (James, 1904/1967a, p. 13), and it exists as an object of our perception, which includes the observer's personal biography (see James, 1904/1967a, p. 13).

The functional distinction between the two experiences is immediately obvious as James admits. The problem is that without a detailed examination of the relations between the 'room' and the percept of the room to show how experiences can be ontologically equivalent, we are forced back into the same epistemological dualism that has troubled thinkers since the Greeks first tackled the problem. James has hitherto built his psychology of perception upon the concept of selectivity so that percepts are learned, and they always include the accompanying states of consciousness of the observer. It is fair to ask then, when confronted with the room, exactly <u>what</u> portions of <u>its</u> total existence enter our consciousness: what <u>happens</u> when two 'experiences' intersect? We must, if we follow James' psychology, conclude that we 'get' what actually exists before us, but we get it according to the psychological laws of perception--and beyond that, we 'get' it from the standpoint of our unique individual consciousness. James allows this when he writes:

> The presentation, the experience, the that in short (for until we have decided what it is it must be a mere that) is the last term of a train of sensations, emotions, decisions, movements, classifications, expectations, etc., ending in the present, and the first term of a series of similar 'inner' operations extending into the future, on the reader's part (James, 1904/1967a, p. 13).

That the 'room' and the percept of the observer stand in some type of relation is not to be denied. There are at least some experienced 'felt' relations between them, and if the individual merely happens to recall a room not immediately present, we can allow that at least a virtual relationship exists between the 'real' room and the 'recollected' room. But beyond this, 'mind' and 'room' would remain structurally (and spatially and temporally) independent of each other. James equates the observer and the object in terms of their ontological status: they are trains of pure experience. But James agrees that they are different trains which maintain their independence from one another even at the moment of intersection. Thus, the two distinct categories of traditional dualism are replaced, in James' analysis, with two different contexts of experience. The distinction between them is not one of ontology but of contingent separation so that the knower and the known are denoted as two different functions of the same piece of experience.

But can James collapse the ontological distinction without lapsing into subjectivism or idealism? James tries to show that thoughts and things are homogenous in some of their categories. He says that their relations in time are identical, that both may have parts and both may be complex or simple. And they can both be "compared, added, and subtracted, and arranged in serial orders" (James, 1904/1967a, p. 29). Furthermore, James writes that in studies of perception it is often difficult to tell which parts of the percept come from the object and which parts come from the mind (see James, 1904/1967a,

pp. 29-30). But Lovejoy's criticism applies here: is there enough identity shown between the two to actually dispense with the older dualism and thereby maintain the existential identity of the two classes of events (see Lovejoy, 1930/1960, pp. 57-58, quoted above, pp. 602-603). James after all demonstrated in the Principles that logical operations can be imposed upon all categories of reality but that the given reality maintains its independence.

James claims that "As 'subjective' we say that the experience represents; as 'objective' it is represented" (James, 1904/1967a, p. 23). The division of any experience into subjective and objective parts is performed by consciousness alone so that: "subjectivity and objectivity are functional attributes solely, realized only when the experience is 'taken', i.e., talked-of, twice, considered along with its two differing contexts respectively" (James, 1904/1967a, p. 23). Specifically, the problem is to determine whether the subject-object distinction can be taken as a purely functional distinction. James now launches into a description of the functional differences between thoughts and things: "Mental fires is what won't burn real sticks; mental water is what won't necessarily (though of course it may) put out even a mental fire" (James, 1904/1967a, p. 33). The fact that James can show a certain homogeneity between thoughts and things--for example, they both have extension, although the quality of that extension varies according to the type of object discussed (see James, 1904/1967a, p. 33),--must be placed against the potentially real structural distinctions that can be drawn between thoughts and things. That is, functional distinctions may in fact arise because they are reflections of real structural distinctions. Lovejoy, commenting on these same passages in James' essay, "Does consciousness exist?" writes:

> Now the attributes here assigned to "mental" and "real"

> objects respectively are plainly irreconcilable with the identity of the two classes. If the knife which is, either in fancy or in "true" perception, my immediate datum is incapable of cutting "real" wood, it has not the characteristics which by the definition given, are essential to "real" knives. While we may "take" an individual thing or event in two relations or contexts, we do not thereby make it possible for it at once to have and not have the same relation to a given other term, or to cause and not cause the same effect. The final outcome of James's reasoning on the matter is thus a complete relapse into the dualism from which he set out to escape. But of this he does not seem to have been clearly aware; he apparently continued to believe that by means of the simple analogy of the point at the intersection of two lines he had justified the belief in the numerical identity of percepts and concepts with the physical objects they disclose (Lovejoy, 1930/1960, p. 59).

Up until the development of radical empiricism, James' psychology emphasized that these structural and relational separations are the critical ones made by the individual. It was shown above that James succeeded in constructing a unified structure for consciousness at the expense of incorporating a mind-body dualism and a corresponding subject-object distinction into his psychology. In order to preserve the structural unity of consciousness and to guarantee the efficacy of consciousness per se, James built his psychology around a mind-body dualism so that consciousness could be defined as something 'more' than the left-over effluvia of brain-states, and he ratified the subject-object distinction so that consciousness did 'more' than simply 'represent' the objects presented to it. Thus he claimed that we use sensations as:

> stepping stones to pass over to the recognition of realities whose presence they reveal. The grass out of the window now looks to me of the same green in the sun as in the shade, and yet a painter would have to paint one part of it dark bown, another part bright yellow, to give its real sensational effect (James, 1890, 1, p. 231).

Perceptions, then, are not accurate sensational representations of the object before the perceiver--instead, they serve as signs or guides for our ideas about the world. The mind is not totally constrained by the world before it and thoughts about objects and the objects themselves may have few real intersecting points. The structural unity of mind is therey preserved in the Principles, and the independent structures of

the physical world are also preserved because they are free to vary, independently from the mind that knows them. At the same time, the epistemological problems of how the mind knows the object are also apparent in this account.

But there are some collisions between mind and world that are not as free to vary in James' psychology, and these involve the actual effects objects in the world have upon the senses. James claimed that we had to believe that the dagger was sharp because we could not help receiving certain tactile sensations when it came into contact with our skin (see James, 1890, 2, p. 306). He ratifies this conclusion in the radical empiricism when he writes that: "Mental triangles are pointed, but their points won't wound. With 'real' objects, on the contrary, consequences always accrue; and thus the real experiences get sifted from the mental ones" (James, 1904/1967a, p. 33). The basic structural differences between thoughts and things are implicitly, if not explicitly retained and these are not simple functional distinctions. As Lovejoy's analysis reveals, whether the dagger can really cut (physical) or not (mental) is the critical factor in determining whether the individual is experiencing the physical dagger or the mental dagger.

James' famous dictum that consciousness will stand for a function only and that the word consciousness can no longer be used to stand for an entity (see James, 1904/1967a, p. 3), is problematic. If mental and physical objects exhibit functional differences only, what accounts for these functional differences if not some difference in structure? James' only way out is to show that thoughts are more substantially composed of felt-sensations than he has previously allowed in the bulk of the Principles. His attempt to make a case for this interpretation of mind revolves around the status of the affectional facts and their 'derivation' within the context of the James-Lange theory of emotion. This attempt

will be discussed below, but first it is necessary to look at the effects on cognition when structural dichotomies are discarded.

Wild makes a valuable comparison between the two meanings of pure experience as it is used, first in the Principles, and later, in James' radical empiricism:

> On the former view, experience may have an over-arching structure that is neither purely subjective nor purely objective but with a place for both of these phenomena. On the latter view, pure experience itself is composed of units which are themselves neither the one nor the other, but neutral to the whole distinction. (Wild, 1969, pp. 361-362).

Actually, radical empiricism, and its all-inclusive concept of pure experience can be seen as an extension of James' psychological construction of consciousness. There are strong parallels between James' construction of a structurally unified consciousness which performs various functions and the world of pure experience in radical empiricism. The concept of one unified structure performing distinct functions is extended, in radical empiricism, to include the whole cosmos, instead of being limited to consciousness per se (see Kuklick, 1977, p. 320; see also Marshall, 1974, p. 312). In the radical empiricism writings, pure experience has become the 'all-pervasive' universe and all separations are artificial or secondary.

Because all separations are secondary or epistemological rather than primary or ontological, James should, according to Lovejoy's analysis, take extreme care in delineating the point where subject and object are functionally separated into new sets of relations at given intersections in time and space (see Lovejoy, 1930/1960, pp. 57-58). The characteristics that pertain to 'knowers' alone and to the 'known' in itself must be taken into account if James is going to be able to support his realist hypothesis concerning the status of the physical world. At the same time, the 'breaking' points between sensation, perception, and conception must be delineated, or at least acknowledged if James is going to be

able to defend the efficacy of human consciousness. Otherwise, consciousness becomes a simple continuum from sensation to conception: it merely becomes more 'abstract' as the train of sensation merges into perception, and finally, conception.

The other problem lies in James' use of the analogy between the logical operations that can be imposed on physical events, and the introspective 'operations' which describe mental events. In the Principles, logical operations belonged to the 'realm' of necessary truth and because of their abstract quality, could be used to describe the objects of any given reality indifferently without changing the structure or 'composition' of that reality. Thus science 'works' by applying the necessary truths to the physical world and so 'discovers' objects which confirm hypotheses. If James is to be successful in showing that thoughts and things are ontologically equivalent, he must show that his usage of logical operations and relations has now substantially changed from his usage in the Principles. That is, he must go beyond analogy and show how logical operations and relations really do guarantee that thoughts and things are ontologically equivalent. And this, as Lovejoy shows, James fails to do.

In the Principles, James could afford to blur the dividing point between the qualities possessed by an object and those imposed upon it by the mind for he had already insisted on the ontological, structural separation between minds and objects. Similarly, the boundaries between the dualistic functions of the mind itself are often blurred in the psychology (note the difficulties encountered in trying to determine the proper application of volition with effort). Within the context of radical empiricism, however, James may not be justified in taking such a cavalier approach. If functional distinctions are to replace ontological distinctions, the cut between mental and physical 'functions'

must be very explicitly made, for the functional separation of two aspects of a single piece of pure experience has now become the only means of ensuring that thoughts and things remain distinguishable.

There are two problems which must be resolved in James' attempt to extend structural unity to all aspects of experience before the theory can be accepted. First of all, he must systematically show there there are reasonable grounds for assuming that thoughts and things are not ontologically distinct. Secondly, he must show that Lovejoy's criticism is invalid; that is, that he has not simply incorporated the same old dualisms into his theory under the disguise of new nomenclature.

The subject-object distinction remains the crucial distinction in James' work. As in all traditional western philosophy, the subject-object mind-matter distinction remains intact, only now at an avowedly experiential, rather than ontological, level. And if the distinction between subject and object, or mind and matter, is functional, empirical, and contingent, rather than ontological, then we are left with a lot of problems to solve on how the distinction arose in the first place. James' surmise that it can be accounted for on an evolutionary basis (see James, 1904/1967a, pp. 35-36), has little to recommend it as he fails to develop the idea, and comes suspiciously close to saying that mind is made up of the 'left-overs' from physical evolution (see Burtt, 1932, pp. 318-319), thus demoting mind to a secondary position, when his original intention was to show that consciousness was necessarily efficacious, that consciousness constituted the centre of the universe.

James' psychology presents a view of man wherein the individual struggles between two poles of existence in his attempts to adapt to and to transcend reality. The universe has essentially been an open universe, the limits on discussion imposed only by an avowedly legislated positivism. But this picture changes with the development of

radical empiricism. The same effect is apparent in James' pragmatism when he develops the idea that metaphysical, religious, and moral issues must be decided in terms of their practical consequences for the individual in the concrete world, so that hypotheses are to be translated into practical terms. In radical empiricism, James seems to be effecting a continuum from sensation to perception to conception. This is necessary if he is to be able to show that thoughts and things are ontologically equivalent. But it has the effect of reducing (at least potentially) the independence of human conception from sensation, or from coercion from sensible objects.

This narrowing of the universe of discourse is made even more explicit when James writes "that the only things that shall be debatable among philosophers shall be things definable in terms drawn from experience" (James, 1909, p. xii). As James' thought develops, the 'knowable' universe (or at least the means for acquiring knowledge of the universe), gradually shrinks or diminishes. In making the experience of unity antedate the subject-object distinction, James makes the subject-object distinction subordinate to unity, and the initial disparity between mind and world and the potential realms of knowledge gives way to a series of intersections in time and space where mind and world become functionally separate as a result of the experiences of the observer.

Wild writes that the 'lived body' has become the central focus of James' radical empiricism:

> This concerns the notions of the lived body which is found in the Principles, but is now considered in new contexts, and developed in new ways at certain points in the Essays. It is worthy of note that in these passages, it is not the brain alone that attracts James' attention, but the lived body as a whole. This body is the centre of the individual's world. As James puts it "everything circles around it, and is felt from its point of view". This body is not only an object in the world, but also its subjective centre. Here, at least, the objective and the subjective coincide. Finally, it is because of our ability to follow the

> expressive gestures of the living body of another and to mesh our actions with his, that solipsism is no problem for us in real life (Wild, 1969, p. 365; internal quotation from James, 1905/1967d, p. 170).

Thus, as Wild goes on to say, the separated consciousness is replaced by the idea of the meaningful behaviour of the living body (see Wild, 1969, p. 365). This notion of the 'lived body' coincides with James' conception of the affections as the links between the mental and the physical.

The merging of the subjective and objective aspects of experience is best described by James in his essays "The place of affectional facts in a world of pure experience", and "The experience of activity". In trying to show once again that thoughts and things are made of the same 'stuff' he returns to the James-Lange theory of emotion to argue that the affections are not wholly mental phenomena, but are experienced physically as well. Moreover:

> The various pleasures we receive from an object may count as 'feelings' when we take them singly, but when they combine in a total richness, we call the result the 'beauty' of the object, and treat it as an outer attribute which our mind perceives (James, 1905/1967c, p. 143).

Object, mind, and body are all necessary for affectional experiences, and their modes or attributes seem to coalesce into one experience. Thus, the judgement that an object is beautiful is subjective but 'beauty' is treated as belonging <u>to</u> the object. Functionally, the object is beautiful. We impose our own feelings upon the object and treat it as if it 'really' possessed the qualities; the separation of the attributes of the experience into distinct categories is a second experience (see James, 1905/1967c, p. 145). James says that the ambiguous status of the affectional facts is completely natural (see James, 1905/1967b, p. 132), but as Williams states, almost all theories of perception including Cartesian dualism are compatible with such findings (see Williams, 1942, p. 118). James claims that:

> as soon as the relations of a thing are sufficiently various it can be sorted variously. Take a mass of carrion, for example, and the 'disgustingness' which for us is part of the experience. The sun caresses it, and the zepher wooes it as if it were a bed of roses. So the disgustingness fails to operate within the realm of suns and breezes,--it does not function as a physical quality. But the carrion 'turns our stomach' by what seems a direct operation--it does function physically, therefore, in that limited sense of physics. We can treat it as physical or as non-physical according as we take it in the narrower or in the wider context, and conversely, of course, we must treat it as non-mental or as mental (James, 1905/1967c, pp. 152-153).

James believes that our abilities to treat an event as mental or non-mental, because of the various 'sorts' that can be made on any piece of experience, provide evidence for his philosophy of pure experience. He shows that those qualities which were legislated as secondary qualities in the scientific revolution have real physical effects and this in itself is a significant advance on the old Lockian position. The assessment of whether an effect is 'real' or 'subjective' depends on where the cuts are made by the sentient participant and he is at liberty to make them where he will. The concept of the 'lived body' is important here because the secondary qualities can be shown to have actual physical effects upon real objects--that is on the bodies of the observers. The feelings provide the experiential link between mind and body, so that experientially it is impossible to tell whether the quality in question is a result of a particular feeling imposed on the object, or whether the object exhibits certain effects which give rise to the feeling through the body of the sentient participant. These separations can only be made after the fact of the experience and therefore constitute new experiences. While James' argument is valuable because it shows that the secondary qualities produce physical effects in the sentient being, it raises several questions.

We must grant that our particular feelings are products of the mind-body-object relationship but we are still left with the problem of

subjectivism. That there can be no perception without a perceiver is standard empiricist dogma from Berkeley on down. And if the primary-secondary qualities distinction is nullified (and not replaced by any other qualitative distinction) then we have no basis to separate out any 'real' qualities objects may possess independently of our perceptions of them. Because we impose qualities outwardly onto objects, and they correspondingly impose theirs inwardly upon the 'mind-body', there are no clear-cut means of determining at the moment of experience what the object really is. Therefore, in James' schema, the final functional separation between knower and known is necessarily idiosyncratic,[18] unless some type of ontological distinction is made between knower and known and this is precisely the type of distinction that James is abolishing. What characteristics an object might possess in the absence of a sentient participant simply cannot be known. The secondary nature of the subject-object distinction means that the cut-off point for the independence of the object from its knower is determined by the would-be knower. This does not mean that objects do not have coercive properties: it does mean that the observer is incapable of making exact distinctions as to what these might be. The primary integrity of objects as such is not preserved within the field of pure experience. This is because instead of making explicit functional intersections between the properties of the knower and the known, or the thought and the object, James purposely intensifies the 'blurring' of their boundaries.

James abolishes the primary-secondary qualities distinction in favour of a secondary separation of the 'concatenated' structure he gives to the universe. The primary and secondary qualities distinction was

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18. In epistemological terms that is. Evolutionarily or psychologically, the particular effects of primary and secondary qualities on the observer may have a determinative naturalistic or social basis.

developed in the first place as a means of establishing the essential properties of objects as distinct from the effects they produced in the observer--and it requires that there be an observer and an observable object. James is attempting to overcome the resulting separation of man and nature (see Chap. 1, pp. 27-29), by making all distinctions between knower and known secondary and participatory. He is concerned with maintaining the unique status of the knower, reversing the older empiricism which implied a universal observer. The older empiricism sacrificed the individual standpoint of the observer in favour of guaranteed properties for objects. James sacrifices the integral properties of objects as real knowables to enhance the role of the subject.

James affirms again and again that a functional distinction must be made between knower and known, but he stipulates that it is the observer who treats the context in which the object is taken, as physical or non-physical. In the Principles and the Pragmatism he stresses that sensible objects have real coercive powers so that when we select objects from the various levels of reality to be 'real', we are constrained by the limits of the concrete world and the demands of our mind-body complex in the choices we make. It appears that he hopes to build his realism on the basis of these constraints. But in the context of pure experience the effect of the constraints is diminished with the equation of thoughts and things at the ontological level. What this means is that we are in danger of assigning a property to an object which it may appear to exhibit, but only exhibits when it is known to the observer. James is willing to put up with such difficulties as part of the price to be paid for a selective individual concept of consciousness and for a 'bridging' of the old epistemological chasm between subject and object. In James' system, objects can only be conceived of in the context of their relationship with the observer.

If we look at the mental status of the cuts we make in nature, we find that in James' account they comprise our cognitive understanding of reality. Cognition is the separation of undifferentiated feelings. To survive, and to develop conceptions about the world, we must first be able to separate the object from the mass of experience on the basis of the effects it will produce in us. The 'synesthesia' that James uses to describe our first 'sensational' experiences is a primitive experience and must give way to some more sophisticated means of classifying reality. The primary and secondary qualities doctrine had pernicious effects on the development of epistemology but it formed the basis of an extremely successful science, and James admits that its founders were free, within the context of the pure experience theory, to carve up the world in this way.

James continually advocates the return to experience for objective verification of conceptual insights. But what this is to mean is difficult to assess. Finding an object that corresponds to the idea in the mind may be easy enough. But finding out about the object through the perceptual mode is more difficult. The perceptual relationship with reality is confounded in the same way that the primitive 'felt' relationship is--that is, the percept is partly physical, partly 'mental', so that while there may be no need for mental images to intervene between the thought and the object, mental 'additions' are still a part of the experience, and the connection between thoughts and objects through pure experience complicates the separation of object properties from subjective additions to objects. The problems for science within such a model are most clearly shown in James' article, "The experience of activity".

In "The experience of activity", James concludes that activity, and hence, human causation, consists of "Sustaining, persevering, striving, paying with effort as we go, hanging on, and finally achieving

our intention--this is action, this is effectuation" (James, 1905/1967d, p. 183). Furthermore, "I conclude, then, that real effectual causation as an ultimate nature, as a 'category', if you like, of reality, is just what we feel it to be, just that kind of conjunction which our own activity-series reveal" (James, 1905/1967d, p. 185). James feels free to make this equation because he has already described the correspondence between consciousness and the external world through the vehicle of pure experience so that:

> What it is 'known-as' is what there appears. The experiencer of such a situation possesses all that the idea contains. He feels the tendency, the obstacle, the will, the strain, the triumph, or the passive giving up, just as he feels the time, the space, the swiftness or intensity, the movement, the weight and color, the pain and pleasure, the complexity, or whatever remaining characters the situation may involve. He goes through all that ever can be imagined where activity is supposed. If we suppose activities to go on outside of our experience, it is in forms like these that we must suppose them, or else give them some other name; for the word 'activity' has no imaginable content whatever save these experiences of process, obstruction, striving, strain, or release, ultimate qualia as they are of the life given to us to be known (James, 1905/1967d, pp. 166-167).[19]

There is little scope left for science in such a paradigm, unless it can be built upon some type of mind-dust theory to describe the behaviour of atoms striving to come together, and scientists have traditionally been reluctant to subscribe to such a view. The imposition of such a subjectivity complicates the search for regular laws to describe the conjunctions and disjunctions in nature. The early history of comparative psychology clearly illustrates the difficulties in the view that the feelings of 'sustaining', 'persevering', and 'striving' in animals could be productively described as analogous to those in humans (see Mackenzie, 1977, pp. 54-100). If such a paradigm is not viable

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19. Note the connection with James' volitional paradigm wherein all awareness of activity is described in afferent terms so that all knowledge of the world is connected to the actor's effects on the world.

for the biological sciences, it is difficult to see how it could be applied to the physical sciences, and James is silent on this point. And while science may attempt to base itself on the knowledge provided in sensation, as was the claim in the scientific revolution, Thayer shows that Newton could not make a continuous link-up between sensation and the mechanical laws he derived for the universe so that an epistemological gulf was created between the two conflicting forms of knowledge (see Thayer, 1968, pp. 24-25).

The dual nature of action, so problematic in the Principles, is now resolved into one broad description of experience that covers man's activities and the activities of the rest of the world. James is coming very close to the panpsychism he will briefly adopt in the Pluralistic universe, and in the statement quoted immediately above, he nullified all the tension he created in describing man's dual tendencies in the Principles. The capacity for free will pitted against the adaptive tendencies is lost in the equation of activity with sensation.

James gets rid of the 'two-man' paradigm of the Principles, replacing it with a continuum of feelings which are verified through a complementary time-space continuum. He concentrates on the sensations produced by effort--mental or physical--rather than the nature of the ideas which provoke mental or physical effort in the first place. This contradicts the explicit separation he made earlier in "The feeling of effort" and the Principles between mental and physical feelings of effort. The distinction between the two types of feelings has, up to this point, constituted the dividing line between habitual or ideo-motor activity and volition with effort. But volition with effort is now experienced within the context of pure experience and James says that:

> the only 'free will' I have ever thought of defending is the character of novelty in fresh activity-situations. If an

> activity-process is the form of a whole 'field of consciousness', and if each field of consciousness is not only in its totality unique...but has its elements unique (since in that situation they are all dyed in the total) then novelty is perpetually entering the world (James, 1905/1967d, p. 185).

Novelty is a characteristics of pure experience--in the same way that James previously claimed that consciousness was constantly changing, the whole cosmos is now depicted as being in a state of constant change. Free will now consists in the development of novel conceptions or ideas in conjunction with novel events in the physical aspect of pure experience. Will operates within the context of experience: willed actions involving effortful volition are no longer seen as involving a struggle against the demands of reality. Instead, free will is linked with the continuous production of new events so that the exhibition of free will becomes a natural effect of James' insistence on the uniqueness of each consciousness, in conjunction with his extension of the principles of mutability and temporality to describe the workings of the physical world.[20]

In conclusion, it seems clear that James was primarily intent on showing that the inextricable unity of the subjective and objective elements of an idea could be extended to include the bodily sensations as well. The use of the bodily sensations would thus serve to illustrate the impossibility of making clear, structural distinctions between thoughts and objects, on pragmatic grounds, by the would-be knower. Thus, instead of merely failing to meet Lovejoy's criteria in establishing clearly demarcated relations to show how subject and object were ontologically indistinguishable, James is in fact attempting to illustrate the impossibility of making such demarcations at all.

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20. The changing status of free will in James' philosophy is discussed again in Chap. 9.

But the theory still presents difficulties: it was shown above that the James-Lange theory of emotion was problematic because it neglected the cognitive or conceptual aspect of emotion and because it ratified an elementaristic, reductionist approach to feeling. These criticisms may equally well apply to the concept of pure experience and its division into knower and known. Without a strong emphasis on the conceptual aspect of the knower-known distinction, the attribution of qualities to objects is inescapably anthropomorphic. Furthermore, if the elementaristic reductionist qualities of the theory of emotion are to be implicitly integrated into the theory of consciousness as a whole, then the same criticisms that James levelled at traditional empiricism may in turn be applied to his radical version. Building novelty into the universe will not necessarily make James immune to such charges since his earlier psychology stressed that the phenomenal appearance of objects was constantly shifting, so that the observer looked for signs of similarity to facilitate recognition of familiar objects. That is to say, from a psychological point of view, James had already made novelty a quality of the phenomenal universe; at the same time he found it necessary to maintain the subject-object distinction to preserve the efficacious quality of consciousness and the independent reality of the physical world.

In brief, James tends to reduce both conception and volition to sensation. If the James-Lange theory is at odds with James' broader structure of consciousness, he is then obligated to show how the extension of the theories of emotion and afferent sensation can in fact be extended to cope with abstract conceptualizations. The dichotomy between necessary truth and the sensible world, so explicit in the Principles, is not resolved in the radical empiricism and it is difficult to see how extending the theory of emotion and emphasizing the analogy

between afferent feelings and feelings of mental effort (so emphatically held apart in both "The feeling of effort" and the Principles), can resolve this particular dichotomy.

Wild is more positive than this in his appreciation of James' radical empiricism and writes:

> But the disciplined study of the facts of the life-world and their meanings will be the condition for any genuine advance. By following James in this arduous task, we may hope to work out a literature close to the concrete, and a critical philosophy which will help men not only to think in a more disciplined and more open way, but to build a world order that is more sound and truly human (Wild, 1969, pp. 387-388).

Wild's optimism may in fact be warranted; at the same time, the substantial problems in radical empiricism would first have to be resolved so that the 'concrete' in Wild's statement could be defined and interpreted according to human conceptualizations which were not totally constrained by the contents of the concrete world. James' theory has been greeted with a substantial amount of critical comment; as the next two sections will show, critics have taken exception to James' subjectivism or latent idealism and his corresponding failure to guarantee the existence of an independent physical world.

Ayer's Criticisms

Ayer's criticisms and appreciations of James' radical empiricism are put forward in the context of his attempt to develop a 'world picture' (he would hardly accept the term 'metaphysic'), based on his own brand of linguistic phenomenalism. Eschewing James' attempt to identify reality with experience, Ayer writes:

> The most that I shall try to do for James' 'neutral monism' is to make out a very general case for the weaker thesis that our conception of the physical world can be exhibited as a theory with respect to our experiences. ...This is not perhaps quite so far as James would have wished to go, but I think that it gives him most of what he wanted (Ayer, 1968, p. 303).

The similarities between Ayer's program and James' could tempt one to analyze Ayer's theory as a refinement of James' own position. It would be misleading to do so however. Ayer's linguistic phenomenalism is based on ordinary language statements as a means of reconstructing the world on phenomenalistic lines. It thus departs from James' intentions in two ways. First, while James for a time considered accepting phenomenalism as the basis for radical empiricism, he eventually rejected it as being unable to account for the stability or permanence of objects in the world.[21] As we have seen, radical empiricism had its own serious problems in this regard, but James could not accept a position that seemed to surrender to the problem at the outset. Second, and much more seriously (for modern versions of phenomenalism are unlike those that were known to James), Ayer's linguistic phenomenalism interposes statements between experience and reality. Ayer's position is not ultimately a theory about the relationship of experience and reality, but about the relationship of statements about experiences and statements about reality. True to the traditions of phenomenalism and analytic philosophy, Ayer does not attempt to characterize the nature of reality as such. Were his theory to be interpreted as an attempt to do so however (for such an attempt was central to James' own aims), it would have to be seen as a theory in which two classes of cognitive constructions (statements about experiences and statements about reality) were required to mediate between experience and reality. As such, Ayer's

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21. In 1898 James wrote:

> The greatest difference between the phenomenist and the common sense view is that the latter gives stable elements whilst the former is afflicted by a restlessness which is painful to the mind. In it one never gets out of the conception of the flux, or process; although it might well seem that all the actual found its place in the flux (James, quoted in Perry, 1935/1974, 2, p. 370).

theory would fail to come to grips with James' central intention to avoid any intervening steps between the experience and the universe of which it was a part.

These comments are not intended as a criticism of Ayer's position. He is writing from within a different philosophical tradition than James, with different aims and priorities, and his linguistic phenomenalism may well be a more viable position than James' own. The differences between their intentions are important to bring out however, since otherwise Ayer's theory could seem to have more relevance to James' than it in fact has.

Nevertheless, if Ayer's theory cannot stand as an updating of James', it is still based on an acute critical analysis of the latter. As a result, his criticisms of 'pure experience', taken according to James' realist ambitions, are very much to the point. Ayer begins his analysis of James' theory with an attempt to determine what James meant by 'pure experience'. He believes that if James meant only that the world can be constructed out of experiences, then his own phenomenalism is compatible with James' intentions (see Ayer, 1968, p. 329). But if James meant that pure experience is <u>all</u> there is--and Ayer believes that this was most likely James' intention--then "the thesis is very dubious indeed" (Ayer, 1968, p. 330). Ayer argues that he can find no warrant for James' statement that pure experience is all that exists, because James attributes the experiences to sentient human beings (see Ayer, 1968, p. 330).[22] Ayer then states that experiences "have only a

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22. That James did intend to maintain a realist foundation for his metaphysic seems clear enough. When James makes the functional distinction between knower and known, he explicitly states that physical objects continue to exist whether or not an observer exists to perceive them (see James, 1904/1967a, pp. 14, 22, 32; 1905/1967b, p. 124; 1905/1967c, pp. 139, 154; see also Perry, 1935/1974, 2, pp. 536, 545). And when James writes that "the experience is a member of diverse processes that

(contd.)

secondary title to existence, since it is only through their association with living bodes that they gain the necessary foothold in an objective time-order" (Ayer, 1968, p. 330). Furthermore, Ayer adds that there is empirical evidence to show that at one time the world did not contain sentient human beings and it is logical to suppose that it will no longer contain any at some time in the future (see Ayer, 1968, p. 330). He concludes that James' theory is only viable if the theory is modified so that the world can be constructed out of pure experience. Ayer believes that such a theory can be constructed with human experience as its foundation; it contains "no predicates that are not cashable at the experiential level, but it does not carry the implication that they are actually cashed in every instance in which they are exemplified" (Ayer, 1968, p. 331). Sentient beings occupy limited time-space regions and the fact that these time-space regions are limited "ensures that there are more occurrences than are actually observed" (Ayer, 1968, p. 331).

Ayer's criticism of James' concept of pure experience is compatible with Perry's problem with the conception: as Perry asks, "had he really succeeded in distinguishing between pure experience and subjective or conscious experience" (Perry, 1935/1974, 2, p. 391). Later on Perry comments:

> There remains only one last possibility, which is to distinguish experience from the experienced. Existence would then coincide

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22. (contd.) can be followed away from it along entirely different lines. The one self-identical thing has so many relations to the rest of experience that you can take it in disparate systems of association" (James, 1904/1967a, p. 12), he is trying to make it explicit that the object in question is simultaneously maintained in many sets of relations, some of which we choose to 'take' it in. Knowledge therefore depends upon the presence of sentient beings, for without sentence, there can be no breakdown of experience into knower and known.

> with the content of experience, but would be independent of any act of experiencing on the part of the mind. This alternative would be the most consistent with James's theory that mind is a peculiar type of relationship among terms which in themselves are neither physical nor mental. A Pluralistic Universe does not clearly affirm this alternative, and even compromises it through identifying the continuum of experience with consciousnesses great and small (Perry, 1935/1974, 2, p. 592).

James creates the difficulties when he limits philosophical discussion to 'things that can be experienced' and then fails to expand on what this means in terms of science and metaphysics. He cannot rely upon his previous writings to give the contents of these areas their ontological status because he has changed the metaphysical basis of his philosophy from a legislated dualism to a neutral monism. Ayer puts the case succinctly when he compares the 'trueness' or 'falsity' of statements about the world with the ontological status of the world described:

> There is no conflict so long as we concern ourselves only with questions of truth or falsehood, without venturing into ontology. But if we insist on posing the ontological question, then the scientific and common-sense descriptions of the world do come into conflict, if only because they compete for the same regions of space. We can consistently accept the common-sense statement that there is a table here, together with the scientific statement that there is a set of particles here, because there are independent ways of testing both statements, and these different groups of tests can each be satisfied. But if we are constructing a picture of the world, then I do not see how we can consistently think of this area as being exclusively occupied by a solid, continuous, coloured object and as being exclusively occupied by a set of discontinuous, volitile, colourless, shapeless particles. In this position we have to opt for one view or the other. At the same time we must not be misled into thinking that we are pronouncing on a question of fact (Ayer, 1968, p. 333).

Although we can assume that James meant to account for these qualitative shifts as functions of the various manifestations of any one piece of experience, he doesn't say so. Instead he claims that the physical world is built up through the conceptual extensions of our original percepts of it:

> Of this our perceptual experiences are the nucleus, they being

> the originally strong experiences. We add a lot of conceptual experiences to them, making these strong also in imagination, and building out the remoter parts of the physical world by their means; and around this core of reality the world of laxly connected fancies and mere rhapsodies floats like a bank of clouds. In the clouds, all sorts of rules are violated which in the core are kept. Extensions there can be indefinitely located; motion there obeys no Newton's laws (James, 1904/1967a, pp. 33-34).

We must then ask what the precise status of Newton's laws is. They are not directly experienced, nor are they immediate abstractions of common-sense experience, but they appear to describe the physical world in universal terms. However, in James' radical empiricism, they appear merely as products of intellectual ends: "There is no original spirituality or materiality of being, intuitively discerned then; but only a translocation of experiences from one world to another; a grouping of them with one set or another of associates for definitely practical or intellectual ends" (James, 1905/1967c, p. 148), and:

> Chemical 'affinities' are a purely verbal metaphor; and, as I just said, even such things as forces, tensions, and activities can at a pinch be regarded as anthropomorphic projections. So far, then, as the physical world means the collection of contents that determine in each other certain regular changes, the whole collection of our appreciative attributes has to be treated as falling outside of it. If we mean by physical nature whatever lies beyond the surface of our bodies, these attributes are inert throughout the whole extent of physical nature (James, 1905/1967c, pp. 149-150).

James' concern is to show the interrelationship between the individual and the external world as 'felt', interconnected experiences which are made up of contributions from the observer and the object. This system would be compatible with the view that the fruits of science are products of the same stream of consciousness which generates the affections. Thus, in a multi-dimensional philosophy of experience, we should not only be able to perceive the table in varying ways, but also to conceive of it in different ways without destroying its essential independence as an object. Such a system is of course open to charges

of subjectivity, but these charges are as operative at the perceptual cut as at the atomic level. Any system which takes its starting point from observables or potential observables has subjective elements. This does not mean that we cannot posit a real external world; what it does mean is that we select the units which shall be taken as the ontological basis of that world.

In his 'revision' of James' radical empiricism Ayer attempts to get around subjectivity by insisting upon the universality of the qualia, by denying that he is ontologizing at all, and by claiming that he is merely describing our theoretical activity (see Ayer, 1968, pp. 334-335). Ayer ends his analysis by stating that only problems of truth and falsehood matter at any level, and that ontological questions might best be avoided altogether (see Ayer, 1968, p. 334). He argues that when the entities which make up the system are treated ontologically, their reification as such is likely to be "treated as a matter of convenience" (Ayer, 1968, p. 335). Ayer then states that this "thesis, which is often attributed to James, that truth is a matter of convenience is not acceptable: and in fact we have seen that James did not hold it, except in the domain of morals and theology" (Ayer, 1968, p. 335). The precise relationship between James' pragmatism and his radical empiricism is discussed below. Nonetheless, there is no indication in James' radical empiricism that the ontological status of pure experience was to be treated as a matter of convenience.

Whether philosophers and psychologists should best avoid ontological questions cannot be legitimately discussed within the scope of this thesis. From a psychological point of view (or from a pragmatic perspective), however, once the subject-object distinction is made by the observer--on an ontological basis, or on James' functional level--the observer treats the distinction as real, as ontological, as James

makes clear in both the Principles and the radical empiricism. Thus the major importance of James' radical empiricism for us is that it illustrates both the importance of making cuts in experience and the arbitrary nature of the cuts we make in carving up the universe.

Other Critics of Radical Empiricism

Wild and Ayer give the most detailed critiques of James' radical empiricism. Other critics are inclined to slight radical empiricism in favour of other aspects of James' work but their comments should be briefly reviewed before we draw the final conclusions about the place of radical empiricism in James' thought.

Flournoy's account is entirely sympathetic and emphasizes the advances James made in resolving the epistemological gaps existing in traditional empiricist and rationalist philosophies. He does not allude to any of the problems which other critics see in radical empiricism and his enthusiasm is worth noting in the context of making an evaluation of James' impact on his contemporaries (see Flournoy, 1917).

Perry's work has been used throughout this thesis as a major source for understanding James' thought and for insights into James' views on various philosophical positions which are at times somewhat obscurely given in his writings. Perry's extreme sympathy for James must be taken into account, however, and Perry's own philosophical viewpoint coloured his interpretation of James' philosophical problems and his assessment of the satisfactoriness of their resolution (see Kuklick, 1977, p. 317). Perry was a prominent exponent of the new realism along with Holt, Marvin, Montague, Pitkin, and Spaulding (see Hirst, 1967b, p. 78). The new realism owed much to James' radical empiricism (see Hirst, 1967b, p. 83), claiming a real existence for logical and mathematical truths along with the contention that the appearances of an object are

objective characteristics of the object and that these characteristics are directly apprehended through perception. Furthermore, these appearances--which include optical illusions--are public and need not be mental as they can be photographed (see Hirst, 1967b, p. 78). Thus, of the controversial resolution of the subject-object distinction, Perry can write:

> The philosophical fruitfulness of James's enrichment of conscious experience lay especially in its giving empirical meaning to that relation of "subject" and "object" which under different names and aspects was in James's day considered to be the distinctive feature of knowing (Perry, 1958, p. 84).

Perry interprets James' radical empiricism as a breakthrough in the 'ways' we are able to think about knowledge; if James' system was not a logical success, Perry argues that it was a pioneering step in the right direction. Perry goes on to show that James' return to experience was a truer empiricism than the older British empiricism because it restored the notion of experience as it originally 'comes' to the individual, undivided into artificial elements. James went further: at the moment of 'experience', consciousness incorporates elements of the object which simultaneously 'belong' to the physical world (see Perry, 1958, p. 96). For Perry, James outlines a viable alternative to the Cartesian dualism of substance, although Perry concedes that the concept is only tentatively worked out. Perry ends his discussion of James' metaphysics with a tribute to James' originality and timeliness in the history of thought. It is worth remembering that while James was developing his final notions of radical empiricism, Perry was pursuing similar research and James acknowledged that Perry's view of consciousness was more like his own than any other that he knew of.[23]

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23. See James, 1904/1967a, p. 24; Perry's views on consciousness are put forward in his article "Conceptions and misconceptions of consciousness" (see Perry, 1904, pp. 282-296).

McGilvary belongs to that group of James' contemporaries who found his radical empricism exciting and productive. McGilvary believes that the notion of fringe states in consciousness is particuarly promising, and his article "The 'fringe' of William James's psychology: The basis of logic" (see McGilvary, 1911, pp. 137-164), attempts to use the fringe states as the psychological relations within consciousness and to extend James' radical empiricism in terms of a logical analysis of mind and experience.

While James provided some of his contemporaries with a 'fruitful system', radical empiricism was criticized by others, and a glance at the appropriate volumes of the Journal of philosophy, psychology, and scientific methods, and the Philosophical review (circa 1905-1912), shows that the merits of radical empiricism, often taken in conjunction with Dewey's instrumentalism and Schiller's humanism, were widely discussed and criticized for a number of years. Perry notes that James categorized these criticisms under the heading 'Miller-Bode objections', and he struggled to come up with satisfactory answers to the problems they 'exposed' in radical empiricism (see Perry, 1935/1974, 2, p. 393).

Bode objected that the attempt to reduce everything to pure experience was futile essentially because this leads to solipsism--"the philosophy of pure experience does not account for our awareness of a world beyond our individual experience; and it also fails to show how there can be a world that is common to a multiplicity of individuals" (Bode, 1905a, p. 153). Bode gives a fairly detailed examination of the problems in James' account of perception and insists that the perceptions of space are psychologically distinct from the perceptions of objects, for one thing, because spatial perceptions always involve a coloured background. Bode goes on to say that there may be corresponding elements in perception where the differences are indiscernable

between observers, but these corresponding elements are obtained by later abstraction; they are not immediately distinguished, and as such may not be of much value in constructing a common world. Bode also questioned the status of those parts of the world which are not experienced and concluded that the pure experience hypothesis does not account for a world beyond immediate experience, nor does it provide a viable alternative to British empiricism or to Kantian idealism (see Bode, 1905a, pp. 128-133).

Later in the same year, Bode reiterated that pure experience had no real standing ground; his criticism this time centred around the difficulties in distinguishing between perceptions and images. He showed that James' functional explanation was insufficient:

> so long as it is impossible to trace in the different stages of a conscious process a continuity or identity of a logical or teleological kind. So long as experience thrusts itself upon us in its characteristically crude, disjointed fashion, an explanation in terms of functional reference to what has gone before must remain hopelessly inadequate (Bode, 1905b, p. 690).

Needless to say, these were not easy criticisms to answer and Perry says that James produced many pages of notes in an attempt to make his position inviolable (see Perry, 1935/1974, 2, p. 393). James attempted a partial answer to Bode's criticism in his article "Is radical empiricism solipsistic?" (see James, 1905/1912, pp. 235-238), which does little more than repeat James' belief that experience must be taken as it comes, that we live forward and understand backwards, and that static substitutions need not be made for the active transitions within experience. The Philosophical review and the Journal of philosophy, psychology, and scientific methods provided a forum for discussing the merits of radical empiricism and James' failure to satisfactorily refute his critics may account for the very limited success of radical empiricism as such in American philosophy.

Modern critics of James' work are even less inspired by radical empiricism. Coplestone dismisses it as "embryonic rather than a full-grown world-view"(Coplestone, 1966, 8, p. 333), after a brief discussion of its major constructions. It receives scant mention in the commemorative volume which appeared in 1942: Williams describes it as one of James' greatest achievements (see Williams, 1942, p. 117), but quickly goes on to point out that James' natural realism did not really support objectivism, and he does not indicate any specific future for the doctrine. Reck, in his Introduction to William James concludes that the doctrine was fertile as the forerunner of logical empiricism and various types of realism although it was never properly worked out. Reck then limits himself to describing radical empiricism and does not expand on its implications beyond this (see Reck, 1967, pp. 57-68).

Brennan, in his William James simply restates James' definition of radical empiricism and does not give any commentary beyond this. In his Ethics of William James, he points out that pure experience and subjective experience are not adequately distinguished, and submits that: "To validate the peculiar forms of relation which hold together scientific, aesthetic, and ethical systems, Radical Empiricism must find something in experience which testifies to their existence" (Brennan, 1961, p. 73). Brennan is primarily interested in developing James' moral philosophy, and his criticisms of radical empiricism centre around its adequacy as a supportive metaphysic for a philosophy of morals. He concludes that the pure experience hypothesis is not sufficient to satisfy our intellectual demands and takes the position that we must go beyond pure experience to create a new morality.

Dooley contends that James' works are essentially unified through his humanism, and his book is devoted to a demonstration of humanism as the unifying theme throughout James' philosophical and psychological

theories. He feels that radical empiricism substantiates the view of James as as humanist but unfortunately he fails to draw any implications beyond this in his book Pragmatism as humanism: The philosophy of William James. His book is valuable, however, because it emphasizes the ways in which James' whole metaphysic and cosmology is centered in human consciousness (see Dooley, 1974).

Boring views James as a phenomenologist (see Boring, 1942, pp. 310-327), because, he says, James was satisfied with psychical givens, and he cites James' impatience with the study of sensation (and the work of Wundt and Fechner as evidence for his judgement). Further, Boring says, a break was made between phenomenology and positivism in the early twentieth century, and he uses the criterion that phenomenology is opposed to reductionism to conclude that it is compatible with James' concept of consciousness. In this article Boring judges that James' primary gift to modern psychology was the establishment of criteria for making the choice between phenomenology and reductionism, and that his legacy is fundamentally phenomenological. Boring theorizes that James' radical empiricism could have provided the basis for an American school of phenomenology, although this has not happened within psychology.

James has perhaps been most inspirational for modern phenomenological philosophy. Phenomenologists have become interested in James' work (particularly the Principles), in part because of its influence on Husserl and in part for its own sake. While the consensus is that James was not a phenomenologist, there have been a fair number of books published in the last three decades which examine James' thought in terms of what it can productively provide for phenomenology. Work in this area includes Linschoten's On the way towards a phenomenological psychology (1968), Wilshire's William James and phenomenology (1968),

Gurwitsch's The field of consciousness (1957), Spiegelberg's The phenomenological movement (1960) and Wild's The radical empiricism of William James (1969).

Wilshire aims to show that James is "neither a pure functionalist, nor an introspectionist, nor a behaviorist; if he is any single thing, he is a pioneering phenomenologist (Wilshire, 1968, p. 7). Although the phenomenologists credit James' psychology with providing the concepts most compatible with their philosophy, Wilshire recognizes that any real relationship between James and phenomenology must be found in the new meanings James' psychology takes on within his radical empiricism (see Wilshire, 1968, pp. 14, 16). Basically, phenomenology requires that a mental state involve the concept of its object and Wilshire claims that the external relationship between thought and object--that is, the dualism of the Principles--is reversed in radical empiricism so that the relationship becomes internal and therefore compatible with the phenomenological concept of intentionality. Phenomenologists, concludes Wilshire, must still look to the Principles for the 'thicker' account of James' concept of experience. In the Principles, "James had not yet explicitly affirmed that the same pure experience supplies the 'stuff' of both mind and matter, but his reasons for believing this are clearer" (Wilshire, 1968, p. 171). Phenomenology, according to Wilshire, affirms the conclusions in James' radical empiricism, but must take the subject-matter from James' psychology. Wilshire shows at length how James' theories differ substantially from phenomenology and admits that: "we look in vain for a completed phenomenological account of the way in which the act of cognition construed as a phenomenal presentation of the body is presented in necessary connection with the object cognized" (Wilshire, 1968, pp. 177-178).

The main impetus for a phenomenological interpretation of James' work is historically taken from Husserl's reading of James' Principles

and the inspiration he derived from it. Later phenomenologists have studied James in light of Husserl's debt to him, and for what James himself could provide for their own development as philosophers. In the debate as to whether or not James can be judged as a pre-phenomenologist against his own intentions, we must decide whether in the long run the compatibilities between James and the phenomenologists outweigh the stated differences. Wilshire answers this question when he writes that "if one can be sure of anything about Husserl, it is that he did not intend to do empirical psychology. He intended to discover a "new a priori science" (Wilshire, 1968, pp. 180-181). And if James had any consistent aim in his whole psychology and philosophy, it was a commitment to empirical knowledge. Within the legislated unity of his radical empiricism, he maintains the functional, if not ontological, distinction between the knower and the known. Truth for James is always found in the moment of perceptual verification, or it is potentially present in the felt transitions of his radical empiricism. Functionally, a priori statements cannot be applied. His is a philosophy of expectation, and no more. For the phenomenologist, "The truth of phenomenological statements is logically prior to the truth or falsity of all empirical statements and to the correctness of all purposive actions" (Schmitt, 1967, p. 150). This is a direct contradiction of James' philosophical ends. Phenomenology is a descriptive philosophy; James' is essentially one of action. There are points in common between the two: there are 'phenomenological' elements in James' account of perception, and Schmitt notes that both James and the phenomenologists opposed reductionism, Hume's particular brand of phenomenalism, and the psychological atomism of Wundt (see Schmitt, 1967, pp. 137-138).

James' philosophy has been productive in the phenomenological movement, and his radical empiricism contributed to the profundity of

that influence. But his major influence on the phenomenological movement has been through the Principles, and radical empiricism has not been specifically taken up by phenomenologists as a viable part of their philosophy. Finally, radical empiricism has had no acknowledged influence on modern psychology: the modern histories of psychology dismiss it with a brief description or they fail to mention it at all.[24]

It must be concluded then, that radical empiricism is largely a failure. But like all of James' failures, it is a significant failure. The analysis of radical empiricism shows the difficulty of accounting for the experienced, interconnected relationship between mind and the world starting from a strictly psychological point of view. The problems that the British empiricists faced in establishing a coherent view of mind have been attributed to the difficulties that resulted through the subordination of their constructions to the physical sciences. The same case cannot be made for James' radical empiricism; the active role of consciousness dominates his works and the demands of science are always subordinated to his psychological theory of knowledge. His attempt, therefore, to construct a unified view of consciousness and reality should be noted by psychologists precisely because it did not succeed.

James based his concept of consciousness on selectivity and the 'cuts' we make in experience. The structure of experience changes from the external 'over-arching' reality of the Principles to the all-enveloping integration of mind and reality of the Essays. The notion of conscious selection remains constant throughout James' works: we learn

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24. See, for example, Watson, 1978; Boring, 1950; Marx & Hillix, 1963.

from James, if in a somewhat negative way, that cuts must be made. Through his often brilliant, and sometimes false, analysis of how the mind comes to terms with reality, we may, perhaps, gain some idea of the relationship between consciousness and the world and our effective roles in the world.

Perhaps psychology and physics will someday provide the world with a unitary ontological basis for sensation and thought and the behaviour of atoms. Perhaps not. Whether monism is a real possibility or whether we must make do with various dualisms or pluralisms where we make the cuts for the sake of expediency and progress cannot yet be determined and James could not be expected to provide a solution to this problem. What he did do was to provide a controversial set of concepts for us to examine, and this is a positive step in itself. Thayer argued that James changed the focus of empiricism when he put his pragmatic theory of truth forward; with radical empiricism he took another major step and demonstrated clearly (if sometimes negatively) that whatever else is basic to the 'old' or to the 'new' world-view, a subject-object distinction must be made at some point in epistemology. Furthermore, the point at which it is made determines the specific contents of the epistemology--how 'subject' and 'object' are defined determines what is 'known' about their relationship, and out of this 'knowedge' grows the world-view--scientific, metaphysical, and ethical. That James recognized that the system he had developed in radical empiricism was beset by major difficulties shows to some degree in his subsequent work, A pluralistic universe, and more strongly in his final work, Some problems of philosophy, where he finally returns from his long philosophical quest to the problems which had motivated him to begin the Principles more than thirty years before.

Conclusion: The Relationship Between Radical Empiricism and Pragmatism

Radical empiricism as the evolutionary metaphysic.

Before examining James' final philosophy it is necessary to look at the relationship between pragmatism and radical empiricism. Pragmatism has been discussed as an evolutionary epistemology, and there are substantial reasons for treating radical empiricism as corresponding evolutionary metaphysic. James' construction of the stream of consiousness has been treated as an evolutionary concept (see Chap. 3, pp. 156-160), and radical empiricism has been described as an extension of the characteristics of the stream of consiousness to the characteristics of experience itself:

> As James suggested, he picked up and extended the stream of consciousness doctrine of the Principles. There, consciousness carved out the enduring objects that comprised the world. Now, James said, consciousness itself was only one mode of organizing a neutral realm of experience which carried within it the elements of its construction into consciousness and objects (Kuklick, 1977, p. 320).

The neutral monism of pure experience is an extension of James' definition of thoughts or ideas; subjective and objective (or mental and physical) aspects of thoughts and of pure experience are inextricably united. The stream of thought and pure experience are both continuous and constantly changing. Finally, novelty, as the product of conscious selection by the mind or natural selection in the physical world, is integral to both conceptions. Radical empiricism can therefore be viewed as James' attempt to extend the evolutionary conception of mind, developed in the Principles, into a metaphysical world view. Radical empiricism gives him the vehicle for discussing all of the metaphysical problems and possibilities which could not, he believed, be legitimately discussed within the context of the scientific, supposedly positivistic psychology. Radical empiricism therefore takes up where the psychology leaves off.

The psychology is by and large an introspective work; the introspective method was considered at the time to be a legitimate means of studying psychological problems and James also made extensive use of non-introspective empirical data to support his hypotheses. No such data base or methodology existed for the radical empiricism however, so that any 'scientific' credibility that radical empiricism exhibits is based on extending the data base of the psychology into metaphysics. This accounts for the subjectivity of the doctrine and it also accounts for many of the internal difficulties of the theory because the solutions reached in the psychology were gained at the price of incorporating a mind-body, subject-object distinction into the psychology. These solutions therefore cannot simply be extended into a metaphysic that does away with such distinctions without considerable revision of the solutions themselves.

If radical empiricism is taken as James' major attempt to extend the evolutionary concepts gained from biology, applied to psychology, and 'transformed' into philosophical assumptions, into a description of the relations and operations of the physical world itself, the internal problems with the theory become more comprehensible. Evolutionary theory was first applied to the associationist, mechanistic materialist world of Newtonian science and Darwin was concerned with showing that his theory extended the applicability of these conceptions to the natural sciences. James' paradigm reverses this position: he wanted to show that the external world really exhibited novelty, mutability, and continuous change, and that mind and world exist in a state of a priori interaction (see James, 1904/1967b, pp. 62-75). Mind and world are the products of the continuous interaction of the objects and relations of pure experience. Evolution in James' sense is a continuous and non-predictive process--that is, James' definition of the evolving

universe includes the mind as an efficacious aspect of the universe, so that variations within that universe are the result of biological and mental spontaneous variations. The world is therefore capable of exhibiting real changes over time. Nature does not necessarily exhibit lawful, mechanical, quantifiable patterns as Darwin, Spencer, and their supporters tried to maintain. Instead, James believed that man must return to pure experience, to perception, if he was going to truly participate in the evolution of the universe.

James made his most explicit attempt to describe the pluralism of the world of pure experience in A pluralistic universe, and there he wrote:

> Pragmatically interpreted, pluralism or the doctrine that it is many means only that the sundry parts of reality may be externally related. Everything you can think of, however vast or inclusive, has on the pluralistic view a genuinely 'external' environment of some sort or amount. Things are 'with' one another in many ways, but nothing includes everything, or dominates over everything. The word 'and' trails along after every sentence. Something always escapes. 'Ever not quite' has to be said of the best attempts made anywhere in the universe at attaining all-inclusiveness. The pluralistic world is thus more like a federal republic than like an empire or a kingdom. However much may be collected, however much may report itself as present at any effective centre of consciousness or action, something else is self-governed and absent and unreduced to unity. ...For pluralism, all that we are required to admit as the constitution of reality is what we ourselves find empirically realized in every minimum of finite life. Briefly it is this, that nothing real is absolutely simple, that every smallest bit of experience is a multum in parvo plurally related, that each relation is one aspect, character, or function, way of its being taken, or way of its taking something else; and that a bit of reality when actively engaged in one of these relations is not by that very fact engaged in all the other relations simultaneously. The relations are not all what the French call solidaires with one another. Without losing its identity a thing can either take up or drop another thing, like the log which I spoke of, which by taking up new carriers and dropping old ones can travel anywhere with a light escort (James, 1909/1967, pp. 321-323).

This world is radically different from the orderly, mathematical, mechanical conception of the Newtonian philosophers. And this is the world as James believed it to really exist. Knowledge of this world is subjective, and 'real' knowledge of events is limited to the moment

of finite perception. The pure experience philosophy is put forward then, as a hypothesis concerning the 'real' nature of the universe, and the 'real' nature of the universe is described by James in terms of elevated and transformed evolutionary concepts. But how can such a world be known methodically by man? James had the problem of convincing his audience that the pluralistic concept of pure experience is a viable concept in itself, that such a world exists and that it can be known.

The simultaneous appearance of pragmatism, radical empiricism and pluralism.

It is in answering these questions that the methodology of pragmatism becomes important. James' psychology and his radical empiricism can be taken as the polar points in his thought. The dualistic psychology gives way to the neutral monism of pure experience, and pragmatism can be placed between them as the mediating methodology. Because the discussion of pragmatism precedes the discussion of radical empiricism, this thesis might well give the impression that the writings on pragmatism came before James' radical empiricism, and that pragmatism looks forward to James' attempt to ontologically equate mind and matter. In fact, the discussion on pragmatism is given first because the issues selected for discussion from James' pragmatism have a closer relationship to the problems discussed in the preceding chapters on the nature of reality and volition. It was therefore decided to introduce James' philosophy through his pragmatism for the sake of continuity.

Although James officially introduced his version of pragmatism in 1898 (see above, p. 463), the lectures that make up Pragmatism: A new name for some old ways of thinking, were not delivered until 1906-1907. The essays which were later collected as Essays in radical empiricism

were written and published in the years 1904-1905 (see McDermott, 1967, pp. 824-844). Pragmatism as a detailed philosophical statement therefore followed immediately on the heels of the essays on radical empiricism. And in 1909, both The meaning of truth and A pluralistic universe appeared.

The meaning of truth was published by James in answer to critics of the earlier Pragmatism and it includes:

> all the work of my pen that bears directly on the truth-question. My first statement was in 1884, in the article that begins the present volume. The other papers follow in the order of their publication. Two or three appear now for the first time (James, 1909, p. viii).

This shows that James was already developing the basis of his pragmatic theory long before he completed the Principles. Further, when we look at the earliest publication dates for the articles that comprise the bulk of The meaning of truth and those which make up A pluralistic universe we find that half of those from The meaning of truth were first published in 1908 and 1909 (the rest appearing in 1885, 1895, 1904, 1905, and 1907), while the lectures later published as A pluralistic universe first appeared in print between 1905 and 1909 (see McDermott, 1967, p. 850). This is a rather roundabout way of emphasizing that James' philosophy cannot accurately be viewed from a strictly 'chronological' perspective. Pragmatism, radical empiricism, and pluralism were developed concurrently.

Although the substantial writings on pragmatism and radical empiricism appeared later in James' life, neither doctrine was a 'new' part of James' thought when it finally appeared in print. James was influenced by Peirce's 1878 paper "How to make our ideas clear", while radical empiricism is first mentioned by name in the preface of The will to believe (1897), when James says that the philosophical attitude expressed in the essays could best be called radical empiricism. Both

pragmatism and radical empiricism were integral parts of James' thought before they appeared in substantial works, and although he maintained that the reader could accept pragmatism without accepting radical empiricism, James saw both conceptions as necessary and congruent parts of his philosophy (see James, 1909, p. ix).

Taken on its own, the pragmatism exhibits a somewhat curious tension between a relativistic, pluralistic conception of the world, and a reflection of the 'trialistic' or 'discrete' realities system of the Principles. And as such, its role as a 'mediating' doctrine, standing between the Principles and the pluralistic radical empiricism, makes sense. But the picture is more complex than this.

James' Principles has been repeatedly analyzed here, and by other critics, in terms of its dualism--Reck, for instance, writes: "This work, as we have noted, contains, besides an immeasurable wealth of scientific detail and philosophical suggestiveness, two main strands --the physiological, behavioral strand and the introspective, phenomenological strand" (Reck, 1967, p. 85). James' dissatisfaction with the dualist approach of the Principles is fully documented in the literature (for example, see Perry, 1935/1974, 2, pp. 72-75); his metaphysical concerns break through again and again, and he finds it impossible to restrict psychology within the limits he sets for it. And the recognition of the appearance of these two strands within the psychology is important for the analysis of James' philosophy. Pragmatism, it appears, has the task of mediating between the two strands in the Principles, and the conflict between the 'holistic' and 'trialistic' elements in the pragmatism provides evidence for its close links with the problems of the Principles. Furthermore, the existence of two opposing strands within the pragmatism shows that James was attempting to make a transition between the old world view and his vision of

the 'new' but that he could not achieve this 'all at once'.

James allows his metaphysical conjectures a fairly free reign in his radical empiricism and an even freer one in his A pluralistic universe. He rejected positivism and went on to examine the philosophical possibilities for developing his notion of pure experience, and he found support in the works of Fechner and Bergson (see James, 1909/1967, pp. 133-331). He sketched a cosmology that he hoped would supersede the Newtonian world-view with its elementaristic associationist psychology and he provided an alternative epistemology to British empiricism. He is often wildly romantic and polemical in his assertions, and we note that there is a complete absence of 'data' in these works, in comparison to the Principles which contains an immense wealth of 'observable evidence', research findings, and information gained through introspective experience. In the Principles, James sought a data base for his conclusions according to the postulates of the scientific method, and though metaphysics intruded, James concluded many of his discussions with the statement that psychology was inadequate to answer the questions he raised. When he turned to metaphysics in the context of philosophy, he could do so with some confidence because he had made his way there through the Principles. He had made the 'cuts' that differentiated psychological science from metaphysical speculation, and he had a huge 'data base' beneath him. By now, he believed that his stream of consciousness, and his theories of volition, emotion, perception, conception, and the perception of space would support his metaphysical hypotheses. But James recognized that the psychological constructions were not an entirely sufficient foundation for his metaphysics when he wrote:

> I am interested in another doctrine in philosophy to which I give the name of radical empiricism, and it seems to me that

> the establishment of the pragmatic theory of truth is a step of first-rate importance in making radical empiricism prevail (James, 1909, p. xii).

Pragmatism, in James' own words, is the mediating doctrine--the 'active' component of his philosophy. Pragmatism is to make radical empiricism prevail: this implies that radical empiricism cannot yet stand on its own and this fits in with James' arguments for a will to believe, his pragmatic contention that truth is made, and his broad use of the evolutionary concepts of temporalism and mutability as guarantees that change is possible. It also dramatizes his humanistic notion that man's consciousness lies at the heart of the developing universe, and that man's actions count in the making and changing of the world. In the Pragmatism, he expresses his humanism as follows:

> Our acts, our turning-places, where we seem to ourselves to make ourselves and grow, are the parts of the world to which we are the closest, the parts of which our knowledge is the most intimate and complete. Why should we not take them at their face value? Why may they not be the actual turning-places and growing-places which they seem to be, of the world--why not the workshop of being, where we catch fact in the making, so that nowhere may the world grow in any other kind of way than this?(James, 1907/1913, pp. 287-288).

Pragmatism was devised as a method for "settling metaphysical disputes that otherwise might be interminable" (James, 1907/1913, p. 45). Thus James used the pragmatic method to 'confirm' his hypotheses of radical empiricism and pluralism. Radical empiricism, however, is rarely mentioned in the works on pragmatism. Instead, James' pragmatism seems to be more closely related to the problems of the Principles. The reader often gains the impression--on reading the pragmatic writings after the psychology--that James was now using philosophy as the means of resolving certain issues that could not be resolved within the context of psychology. It also seems likely that James' dissatisfaction with the restricting and unsatisfactory dualisms of the Principles led him to break that work into two philosophical strands so that the

subjective, phenomenal, metaphysical speculations of the Principles largely find their way into radical empiricism, while the pragmatic writings are more concerned with the active, epistemological issues. This division of labour makes a fair amount of sense: James is freer to be speculative and pluralistic in his metaphysics if he thinks that he can rely on pragmatic methodology as a corrective and as a means of verifying or 'making true' his metaphysical statements. The tension in the pragmatism therefore reflects both the degree of success and the problems still extant in James' attempts to work out satisfactory methodologies for solving metaphysical issues. This interpretation of the relationship between radical empricism and pragmatism also correlates with James' view that metaphysical truth is a possibility--that metaphysics should take heart from physics and recognize that the task of rationalizing the world from a metaphysical perspective is simply the harder task (see James, 1890, 2, p. 671). Metaphysical axioms or theories serve a valuable role because they provide the 'goal' for the methodological thinker.

Pragmatism as the 'methodology' serves as the 'active' part of James' philosophy, and its 'activity' works in two ways. It looks back to the Principles to determine which concepts have empirical support, and thus can provide a substantial basis for the experience philosophy, and it looks 'forward' to the metaphysical 'ends' of radical empiricism to select the postulates that James will attempt to translate into empirical 'givens'.

If such a relationship between the two 'philosophies' was James' intention, many of the problems in his work become clearer. The pragmatic theory of truth now makes sense as a set of processes for determining truth at various 'reality' levels for James has stated his hopes that unity is increasing in the world, and he sees this unity evolving

through the accumulation of experience:

> The world is in so far forth a pluralism of which the unity is not fully experienced as yet. But, as fast as verifications come, trains of experience, once separate, run into one another; and that is why I said, earlier in my article, that the unity of the world is on the whole undergoing increase. The universe continually grows in quantity by new experiences that graft themselves upon the older mass; but these very new experiences often help the mass to a more consolidated form (James, 1904/1967b, pp. 89-90).

If the pragmatic theory of truth really 'works' it will work by bringing the various levels of reality into closer and closer conjunction, and the differences between the pragmatic theories of truth will then disappear when a truly pluralistic world of experience comes into being.

If we take the world of pure experience as the world James aims to make true, several difficulties in the integration of his work disappear. The world of pure experience has been shown to be a strangely passive world, where the will to believe is no longer emphasized, essentially because thoughts and things have been ontologically equated. The 'passive' nature of the world of radical empiricism is exhibited in James' concentration on the 'virtual' aspects of truth (see James, 1904/1967b, p. 68), his description of the verification process as a series of 'felt transitions' (see James, 1904/1967b, pp. 66-69), and his extension of thoughts to include concomitant physical sensations (see James, 1904/1967b, p. 65). James strengthens the bond between objects and ideas by stressing the validity of virtual knowledge and emphasizes that virtual knowledge can and does substitute for actual knowledge (see James, 1904/1967b, p. 68). The same theme appears in the pragmatic writings, but there the use of virtual knowledge is limited to the verification of ideas about physical objects (see James, 1907/1913, pp. 202-205). James extends this conception in radical empiricism to make the connection between conceptual knowledge of the 'remoter' portions of the physical world and the occasional perceptual intersections

of our lives with these remoter objects and relations:

> The objective nucleus of every man's experience, his own body, is, it is true, a continuous percept; and equally continuous as a percept (though we may be inattentive to it) is the material environment of that body, changing by gradual transition when the body moves. But the distant parts of the physical world are at all times absent from us, and form conceptual objects merely, into the perceptual reality of which our life inserts itself at points discrete and relatively rare (James, 1904/1967b, p. 65).

James' rationale for extending the unit of thought to include physical sensations now becomes clear. The difference between perception and conception is now largely given in terms of the particular individual's position in time and space. Virtual knowledge is equated with perceptual knowledge (see James, 1904/1967b, pp. 61-65), and verification or 'knowing' thus consists in the ambulation or 'felt transitions' between concept and percept (see James, 1904/1967b, pp. 62-75). Knowledge, or conception is therefore as subject to change as perception and James writes:

> According to my view, experience as a whole is a process in time, whereby innumerable particular items lapse and are superseded by others that follow upon them by transitions which, whether disjunctive or conjunctive in content, are themselves experiences, and must in general be accounted at least as real as the terms which they relate (James, 1904/1967b, p. 62).

and:

> Why insist that knowing is a static relation out of time when it practically seems so much a function of our active life? For a thing to be valid, says Lotze, is the same as to make itself valid. When the whole universe seems only to be making itself valid and to be still incomplete (else why its ceaseless changing?) why, of all things, should knowing be exempt? Why should it not be making itself valid like everything else? That some parts of it may be already valid or verified beyond dispute, the empirical philosopher, of course, like any one else, may always hope (James, 1904/1967b, pp. 75-76).

The analysis of the relationship between radical empiricism and pragmatism does not resolve the substantial difficulties of radical empiricism. It does however show that James was not proposing radical empiricism as a 'finished' philosophical statement. Instead, radical

empiricism is the vehicle for James' hypothesis that the world really is temporal, mutable, continuous, and pluralistic. Radical empiricism therefore can be taken as a hypothesis for analyzing the mind and world in a radical evolutionary way with the hope that the radical evolutionary view will eventually prevail.

It is probably fair to conclude that the greatest virtue of James' radical empiricism is the redefinition of physical reality and the relationship of the mind to the redefined physical world, not in the sense of making an ontological equation between thoughts and things, but in presenting a relativistic view of reality and of knowledge itself. In this sense, radical empiricism is a polemic for a new evolutionary world-view, and as such performed a vital role in turning the selected, transformed evolutionary conceptions into common assumptions about the world. If James' philosophy had a role in effecting such a change, then his work, in the final analysis, is a success.

CHAPTER 9

SOME PROBLEMS OF PHILOSOPHY:

THE FINAL PHILOSOPHY

Introduction

Perhaps the most telling evidence for the interpretation given in Chap. 8 to the relationship between radical empiricism and pragmatism lies in James' last, and sadly incomplete book, Some problems of philosophy. It is unfortunate that James did not live to complete this work because it is his most confident and serious philosophical production. Perry writes:

> The serious enterprise of James's last days, however, was the composition of the most technical and carefully reasoned of all his books. ...This volume represents a definite turning away from polemics, popular and literary appeal, mysticism, and flights of imaginative speculation (Perry, 1935/1974, 2, pp. 661-662).

Some problems of philosophy marks an interesting close to James' varied career. He intended the book to be read by philosophers which accounts for the careful reasoning and serious tone. But he had planned to make changes in the text and when directing that it be published after his death, he wrote "Say that it is fragmentary and unrevised. Call it 'A beginning of an introduction to philosophy'. Say that I hoped by it to round out my system, which now is too much like an arch built only on one side" (James, 1911, pp. vii-viii).

The lack of mysticism, polemic, flights of imagination and their replacement by a sober confidence is important; James was aware that this was his last chance to complete his philosophy, and he had at last succeeded in coming to terms with some of the philosophical dilemmas that had plagued him for so many years. In light of this new confidence, it is significant that Some problems of philosophy so often looks back to his early psychology and that it is dedicated to Renouvier whom he had so long ago 'outgrown' philosophically:

> '... he (Charles Renouvier) was one of the greatest of philosophical characters, and but for the decisive impression made on me in the seventies by his masterly advocacy of pluralism,

> I might never have got free from the monistic superstition under which I had grown up. The present volume, in short, might never have been written. This is why, feeling endlessly thankful as I do, I dedicate this text-book to the great Renouvier's memory (James, 1911, 'Dedication'; see also Perry, 1935/1974, 2, p. 662).

James' final philosophy is linked to his radical empiricism, pragmatism, and pluralism, but there are several factors which distinguish it from the earlier philosophical writings. James' philosophy consistently had its roots in his systematic and empirically oriented psychology and the final philosophy is no exception. But some of the significant differences between the earlier and the final philosophy lie in the particular use James made of the psychology in Some problems of philosophy, in his recognition that he had not succeeded in solving many of the problems of the Principles in radical empiricism, and in his admission that these problems would not lend themselves to immediate solutions. James' earlier philosophy provided the foundations for the construction of a mutable, temporal, pluralistic view of the physical world, based on the conception of consciousness first developed in the Principles. The evolutionary view of the physical world is ratified in the final philosophy but it is now stripped of the romanticism and idealism which marred the pluralistic pure experience philosophy. James' venture into radical empiricism gave him confidence in the hypothesis that the sensible world could be reconstructed in temporal and mutable terms and he could now begin the reexamination of the roles of percepts and concepts with the goal of 'rationalizing' the new view of reality. Thus, there is far more emphasis on the role of science and its relation to mind in the final philosophy than there is in the radical empiricism. Furthermore, there are echos of the limitations and restrictions that restrain James' psychological theorizing in the means he uses to limit the scope of philosophy to certain

metaphysical and epistemological questions. These limitations are made most explicit when James abandons the attempt to insist on an ontological equivalence between thoughts and things and confines himself to the claim that percepts and concepts are "made of the same kind of stuff" (James, 1911, p. 107).[1]

Percepts and Concepts

James begins with a breakdown of percepts and concepts according to their functional differences, and this reappraisal of the distinction is valuable for it leads James back once again into an analysis of the fundamental interrelationship between them so that: "We harness perceptual reality in concepts in order to drive it better to our ends" (James, 1911, p. 65). He argues from the standpoint of a confirmed empiricist: Perry writes that the "affirmation of the priority of perception to conception, both genetically and cognitively, is 'the tendency known in philosophy as empiricism'; to which, in the remainder of the book, the author will hold fast" (Perry, 1935/1974, 2, p. 663; see also James, 1911, p. 106).

James shows that historically all of the sciences grew out of philosophy and separated from philosophy as:

> The fertility of the newer conceptions made special departments of truth grow at such a rate that they became too unwieldy with details for the more universal minds to carry them, so the special sciences of mechanics, astronomy, and physics began to drop off from the parent stem (James, 1911, p. 21).

Philosophy thereby became the repository for all the questions that the specialized sciences were unable to answer. Philosophy had come to mean 'metaphysics' in contrast to those studies of reality which

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1. The relationship between the psychology and the final philosophy and the limitations imposed on both are discussed in more detail below.

were organized into sciences, and James argues that this separation should give way to the view that "philosophy must include the results of all the sciences and cannot be contrasted with the latter" (James, 1911, p. 27). But he also concludes that such a unification belongs to the future and that he will therefore concentrate on metaphysics in the restricted sense of the term. Within this framework, percepts and concepts are to be used as the basic 'units' and the metaphysical view James now presents is built on the derivations of the discrete functions of, and relations between, percepts and concepts (James, 1911, pp. 28, 47).

James returns to an analysis of the functions of percepts and concepts with the aim of determining their explicit roles in the rationalization of sensible reality. Thus, science progresses as follows:

> The 'rationalization' of any mass of perceptual fact consists in assimilating its concrete terms, one by one, to so many terms of the conceptual series, and then in assuming that the relations intuitively found among the latter are what connect the former too. ...We may well call this a theoretic conquest over the order in which nature originally comes. The conceptual order into which we translate our experience seems not only a means of practical adaptation, but the revelation of a deeper level of reality in things. Being more constant, it is truer, less illusory than the perceptual order, and ought to command our attention more (James, 1911, pp. 70-71). [2]

Because conception is necessary for the construction of scientific systems, James says that philosophers have traditionally accorded it a more exalted role than perception:

> The Platonizing persuasion has ever been that the intelligible order ought to supersede the senses rather than interpret them. The senses, according to this opinion, are organs of wavering illusion that stand in the way of 'knowledge', in the unalterable sense of that term. They are an unfortunate complication on which philosophers may safely turn their backs (James, 1911, p. 75; see also James, 1890, 1, p. 479).

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2. See also James, 1890, 2, pp. 651, 664-665, 667, where James expresses the same conception of the genesis of science.

James proposes to replace the elevation of concepts with the view that percepts and concepts are "made of the same kind of stuff, and melt together when we handle them together" (James, 1911, p. 107). Here the extravagancies of radical empiricism give way to a functional interactionist view of conscious processes, and the world is brought back together through epistemological means. This perspective replaces the legislated ontological equivalence between thoughts and things:

> The two mental functions thus play into each other's hands. Perception prompts our thought, and thought in turn enriches our perception. The more we see, the more we think; while the more we think, the more we see in our immediate experiences, and the greater grows the detail and the more significant the articulateness of our perception (James, 1911, pp. 108-109).

Knowledge, in James' view, is the product of the interaction between percepts and concepts. At the same time, he believes that the perceptual world constitutes the primary reality, and he returns to the Principles for evidence to support this conclusion (see James, 1911, p. 111ff.). The reference to the work on the perception of reality in the Principles is significant: the mind-matter distinction acts as the fundamental basis for James' distinctions between the various sub-worlds of reality in that work, and the reference to the Principles, appearing immediately after James has explicitly equated percepts and concepts (rather than thoughts and things) in an ontological statement, underscores the conclusion that he has now abandoned the attempt to ontologically equate thoughts and things. Once again, however, James is faced with the problem of how the mind knows the world, and once again, he must redefine the relationship between perception and conception:

> In the last resort a concept can only be designative; and... the concept 'reality', which we restore to immediate perception, is no new conceptual creation, but only a kind of practical relation to our Will, perceptively experienced, which reasoning had temporarily interfered with, but which, when the reasoning

> was neutralized by still further reasoning, reverted to its original seat as if nothing had happened. That concepts can neutralize other concepts is one of their greatest practical functions (James, 1911, pp. 111-112).

James' return to theory of reality of the Principles after his long forays into philosophy, and his reassessment of the functions of percepts and concepts, are necessitated by the changes he has made, through the philosophication of evolutionary theory, in the construction of the physical world that is known by the mind. The reevaluation of the roles of percepts and concepts is now undertaken with the goal of establishing pluralism as the foundation of his world picture. To this end, he stresses that concepts, taken in isolation, cannot provide an accurate view of reality:

> I believe that philosophy stands at present at the beginning of a new sort of activity, not unlike that which began with Locke, and which will end by defining (in ways not dreamed of till quite recently) the limits of what the conceptual or logical method can accomplish, and the parts of reality which escape treatment by fixed logical categories or concepts. I am quite sure that in establishing the inadequacy of concepts, the door will be opened to much vagueness and extravagance, and that possibly something like the excesses of the German romantic school in philosophy may yet be in the order of the day. That will doubtless be a pity, and must be counted to the disadvantage of the movement. But it gives me very little anxiety, for I think that the final upshot and result will be a greater distinctness and clearness than philosophy has ever seen. ... But, dear old friend, neither you nor I will be there!! (James, in a letter to Pillon, 1909; quoted in Perry, 1935/1974, 2, p. 662).

James believed that a new philosophy, based on perception, was in the making; and Perry writes that Some problems of philosophy is James' attempt to go beyond the immediate 'romantic' phase he envisaged (and indulged in himself), and to provide a clear base for the development of the new metaphysic (see Perry, 1935/1974, 2, p. 662). His conviction that conceptual knowledge is largely static and his oft-repeated assertion that perception is prior to conception is more than a description of a psychological hierarchy of knowledge acquisition: it pro-

vides the baseline for James' new empiricism, which Perry says: "implies particularism, pluralism and novelty" (Perry, 1935/1974, 2, p. 663). James has used percepts and concepts as the fundamental units of consciousness throughout his philosophy and his return to percepts and concepts is not in itself significant. It is what James does with perception and conception at each stage of his philosophy that makes their analysis significant in each of his works, so that the examination of James' philosophical development can be given in terms of his progressive redefinition of perception and conception.

The influence of Bergson[3] is strongly felt in James' final definitions of the functions of percepts and concepts as they supplement each other in 'knowing' the world:

> The deeper features of reality are found only in perceptual experience. Here alone do we acquaint ourselves with continuity, or the immersion of one thing in another, here alone with self, with substance, with qualities, with activity in its various modes, with time, with cause, with change, with novelty, with tendency, and with freedom. Against all such features of reality the method of conceptual translation, when candidly and critically followed out, can only raise its non possumus, and brand them as unreal or absurd (James, 1911, p. 97).

In passages like this, James goes far beyond a 'mere' functional description of the roles of percepts and concepts and his conception of the roles of percepts and concepts is now qualitatively integrated into his pluralism. James is now embarking on his final philosophy of meliorism which holds that the fate of the universe depends upon a pluralism of independent powers so that the universe will evolve 'successfully' only if these powers work towards its success (see James, 1911, pp. 228-229). The meaning of freedom therefore undergoes a change in contrast to earlier definitions given in the Principles and The will

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3. See James, 1911, pp. 96-97 where he acknowledges Bergson's influence on his definition of the functions of perception and conception.

to believe. In these earlier works, free will was based upon the 'chance' hypothesis, wherein a "margin of indeterminism" (Perry, 1935/1974, 2, p. 663), existed, leaving a potential opening for acts of free will. Within these limits, novelty was possible. James now rejects this 'tychistic' concept of chance as a "negative intellectualism" (Perry, 1935/1974, 2, p. 664), and turns instead to Bergson's notion of 'creative evolution'. James then moves on to create a "really growing world" (Perry, 1935/1974, 2, p. 664), through the affirmation of the human experience of novelty.

The 'awareness' of novelty--which is central to pluralism--is grounded in perception:

> Pluralism, ...taking perceptual experience at its face-value, is free from all these difficulties. It protests against working our ideas in a vacuum made of conceptual abstractions. Some parts of the world, it admits, cannot exist out of their wholes; but others, it says, can. To some extent the world seems genuinely additive: it may really be so. We cannot explain conceptually how genuine novelties can come; but if one did come we could experience that it came. We do, in fact, experience perceptual novelties all the while. Our perceptual experience overlaps our conceptual reason: the that transcends the why. So the common-sense view of life, as something really dramatic, with work done, and things decided here and now, is acceptable to pluralism.'Free will' means nothing but real novelty; so pluralism accepts the notion of free will (James, 1911, pp. 140-141).

Free will is now subsumed under the concept of meliorism. This is a radical departure from the position James takes in the Principles because he now makes free will an indigenous part of reality rooted in the perception of novelty; this replaces the earlier notion where novelty is achieved by individuals fighting against a constricting coercive concrete world. Freedom is found in the perceptual flux itself and this conception of freedom carries the seeds for the beginnings of a 'naturalmorality', a possibility James largely rejected in the Principles.

Furthermore, the function of perception as a means to knowledge has undergone a transition. In the Principles, James emphasized the

tendency of the observer to seek common or seemingly permanent qualities in the spatial-temporal repetition of sensible objects (see James, 1890, 1, p. 231). Conceptions about reality grew out of the seemingly constant qualities of the sensible world. Now, however, James is emphasizing that perception also performs the opposite function--it facilitates the recognition of novel phenomena--that is, novel occurrences are real events in the external world, and their appearances can only be recognized through perception. The potential for novelty in the world and the human capacities for recognizing novelty and for effortful volition are combined to present a world-view wherein mind and matter 'evolve' or work together in the production of a new world:

> We can create the conclusion, then. We can and we may, as it were, jump with both feet off the ground into or towards a world of which we trust the other parts to meet our jump--and only so can the making of a perfected world of the pluralistic pattern ever take place. Only through our precursive trust in it can it come into being (James, 1911, p. 230).

James' renewed discussion of concepts and percepts is undertaken to show what kind of world-views result when either perception or conception is given priority in 'knowing' the world. Putting our faith in conceptual knowledge means for James that we essentially accept a static and immutable kind of 'Absolute' which is incompatible with the fullness of the reality to be known. The characterization of the cognitive faculties represents, in minature, two distinct world-pictures.

But how closely related is the real concrete world to our perceptions and conceptions of it? Within the framework of pure experience, James promotes an ontological equivalence between thoughts and things. In Some problems of philosophy he says that percepts and concepts are of the same stuff--that is, our experiences are consubstantial (see James, 1911, pp. 107-109). But the percept is not necessarily consubstantial with the object of perception. James intended Some problems

of philosophy as a metaphysical examination of the units of mind and their relations to the world (see James, 1911, p. 46). He realized in the context of developing radical empiricism that the pragmatic method could not actually be used to resolve certain metaphysical disputes (see James, 1905/1967d, p. 180). The pragmatic method was useful in allowing him to hypothesize that the universe is really pluralistic, that novelty is a real quality of the physical universe, that the mind can become cognizant of novelty, and that the mind--through the exercise of effortful volition--can meet the novelty of the physical world with novel constructs of its own. But if these hypotheses are actually to become true, James realized that he must first provide a basic conceptual framework for viewing mind and its relationship to reality in a way that would make his hypotheses plausible. This reconstruction of the relationship between mind and matter is the aim of Some problems of philosophy. In setting up a new conceptual framework for exploring the interaction between the mind and the world, James found that he must once again begin by separating, or 'pushing apart' the mental and physical aspects of reality. This 'pushing apart' is most clearly demonstrated in James' attempt to resolve the problem of causality once again, this time in terms of a model based on our perceptual experiences of the relations between objects.

The Twin Problems of Causality and Novelty

Causality.

James concludes Some problems of philosophy with a discussion on the problem of causality, stating that:

> The attempt to treat 'cause', for conceptual purposes, as a separable link, has failed historically, and has led to the denial of efficient causation, and to the substitution for it of the bare descriptive notion of uniform sequence among events. Thus intellectualist philosophy once more has had to butcher

> our perceptual life in order to make it 'comprehensible' (James, 1911, pp. 217-218).

But James was fully aware of the problems that arose when perceptual experiences of causation were taken as the 'true' nature of causality, and which had led Hume to make his denial of 'efficient causation':

> If we took these experiences as the type of what actual causation is, we should have to ascribe to cases of causation outside of our own life, to physical cases also, an inwardly experiential nature. In other words, we should have to espouse a so-called 'panpsychic' philosophy. This complication, and the fact that hidden brain-events appear to be 'closer' effects than those which consciousness directly aims at, lead us to interrupt the subject here provisionally. Our main result, up to this point, has been the contrast between the perceptual and the intellectualist treatment of it (James, 1911, pp. 218-219).[4]

Unfortunately this is as far as James went. Perry writes that "He promised a discussion, in later chapters, of idealism, of psychophysics, and of Bergson" (Perry, 1935/1974, 2, pp. 665-666), but James died before he could fulfil these intentions.

Had James lived to fulfil his plans, we would have been closer to understanding how he intended to relate mind to the physical world. It is clear that he had abandoned the problematic thesis of the radical empiricism where he postulated that the affectional experience of effort could be used to infer the nature of causal relations between non-sentient objects, for he reinstates the 1880/1890 distinction between physical and mental effort in his final philosophy:

> As I now write, I am in one of these activity situations. I 'strive' after words, which I only half prefigure, but which, when they shall have come, must satisfactorily complete the nascent sense I have of what they ought to be. The words are to run out of my pen, which I find that my hand actuates so obediently to desire that I am hardly conscious either of resistence or of effort. Some of the words come wrong, and

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4. Or, as Perry writes: "If we ask whether all causes are of this experiential sort, the answer must depend on how we conceive the relation of mind and body and on whether we accept or reject the panpsychistic view of the physical world" (Perry, 1935/1974, 2, p. 665).

> then I do feel a resistance, not muscular but mental, which instigates a new instalment of my activity, accompanied by more or less feeling of exertion. If the resistance were to my muscles, the exertion would contain an element of strain or squeeze which is less present where the resistance is only mental. If it proves considerable in either kind I may leave off trying to overcome it; or, on the other hand, I may sustain my effort till I have succeeded in my aim (James, 1911, pp. 210-211).

Once again, James enters into the problem of separating the particular qualities which characterize mental phenomena from those which may characterize physical operations. The fact that perception is defined as the function of perceiving outward events and registering the changes and consistencies of the temporal mutable world (in contrast with conception which is regarded as an organizing faculty and therefore as static and ill-equipped to replicate the external world as it 'happens') does not mean that perception can necessarily represent causal or underlying processes (see James, 1911, pp. 47-50). Therefore James once again finds it necessary to advocate a reexamination of the relationship between mind and brain to gain a more fundamental notion of causation--an option he pragmatically rejected in the essays on radical empiricism.[5]

> The logical conclusion would seem to be that even if the kind of thing that causation is, were revealed to us in our own activity, we should be mistaken on the very threshold if we supposed that the fact of it is there. In other words, we seem in this line of experience to start with an illusion of place. It is, as if a baby were born at a kinetoscope-show and his first experiences were of the illusions of movement that reigned in the place. The nature of movement would indeed be revealed to him, but the real facts of movement he would have to seek outside. Even so our will-acts may reveal the nature of causation, but just where the facts of causation are located may be a further problem. With this further problem, philosophy leaves off comparing conceptual with perceptual experience, and begins

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5. See James, 1905/1967d, pp. 182-3, 188; James is aware that his pragmatic solution will not resolve the metaphysical or physiological problems of determining the nature of causation.

> enquiring into physical and psychological facts (James, 1911, pp. 216-217).

Philosophy, then, can only go so far in seeking the nature of causation and the potential answers to this metaphysical puzzle appear, for James, to lie in the empirical sciences of physiology and psychology. He has come full circle in the end.

Novelty.

Perry writes that James' universe became more and more interesting as his philosophy matured. And his universe became more interesting as a function of the availability of the physical world to perceptual experience (see Perry, 1935/1974, 2, p. 667). The evolutionary concepts of temporalism and mutability reappear in Some problems of philosophy in their strongest form as James moved towards the position that true novelty in the concrete world is immediately available to perception:

> When perceptible amounts of new phenomenal being come to birth, must we hold them to be in all points predetermined and necessary outgrowths of the being already there, or shall we rather admit the possibility that originality may thus instil itself into reality?
>
> If we take concrete perceptual experience, the question can be answered in only one way. 'The same returns not, save to bring the different'. Time keeps budding into new moments, every one of which presents a content which in its individuality never was before and will never be again. Of no concrete bit of experience was an exact duplicate ever framed (James, 1911, pp. 147-148).

James' insistence that change is directly perceived, and his emphasis on the essentially 'static' nature of conception constitute a significant reinterpretation of the percept-concept relationship as it is given in the Principles. At the time when he was writing the Principles, James subscribed to the position that novelty arose by chance in an otherwise orderly world. And at the human level, novelty was generated through the fortuitous application of effort. Like all traditional philosophers, he noted that the phenomenal appearances of things were

constantly changing, so that the individual never actually got the same perception twice, but James stressed that the perceiver tended to ignore the phenomenal shifts and to concentrate on those elements which appeared to be stable over time. These selections were eventually represented as stable conceptions so that the table was 'called' square even though it rarely presented a truly square appearance to perception, and the grass was 'called' green, even though the artist would sometimes have to represent it as yellow or brown "to give its real sensational effect" (James, 1890, 1, p. 231). It is significant that in 1890 James did not argue that the shifts in phenomenal appearances had any particular implications for the philosophication of evolutionary theory.

In the final philosophy, however, James has revised his conception of the physical world so that novelty is a real and ever-present quality of the continually changing universe. Awareness of novelty is now generated through the individual's perceptions of the sensible world and the continual shifts in the phenomenal appearances of objects and events are taken as evidence that novelty or mutability is a genuine characteristic of the physical world. Correspondingly, James now emphasizes the 'static' nature of conception as a control for cognition. The function of conception does not differ substantially from the Principles to the final philosophy--James' statement that "'White' means a color quality of which the mind appoints the standard and which it can decree to be there under all physical disguises" (James, 1911, p. 105), could easily have appeared in the Principles (see James, 1890, 1, pp. 459-468). But the rationale for defining conception in this way has changed as James' philosophy has matured.

James is attempting to combine "logical realism" with empiricism by making concrete percepts 'primordial', while concepts are of

secondary origin (see James, 1911, p. 106). Our conceptual abilities allow us to link perceptual inputs according to their common elements while James insists that these common elements are never identically perceived (James, 1911, pp. 104-106). In the Principles, James also decreed that the appearances of objects are constantly fluctuating (see James, 1890, 1, p. 231). But he does not use the fluctuating appearances as indicators of real novelty and while not subscribing to the Millian view of the permanent possibilities of sensation, he ratifies the validity of the mathematical/mechanical Newtonian science. James' insistence, in the final philosophy, that the phenomenal fluctuations can be taken as indicating that novelty is a real quality of the physical world means that a new network of rationalization is required to make the temporal, mutable universe comprehensible. Correspondingly, James must also ensure that the objects and relations which undergo these real changes are recognized by the individual when they reappear in new phenomenal forms. In the Principles he could rely on the definable coercive properties of objects (notably through his use of the primary and secondary qualities distinction), in conjunction with the mind's tendencies to seek out the 'same' and to ignore the 'different'. The universe of the Principles is a lawful universe; real changes are possible but they are largely fortuitous events, and as such can be recognized as radical departures from the norm. While James certainly never shared Mill's confidence in the permanent possibilities of sensation (see Chap. 3, pp. 138-141), he had not yet succeeded in extending his derivation of evolutionary conceptions to radically describe the physical world. Now, in his final philosophy, he has to ensure that some means of making permanent connections between events is retained. Conceptualization is given this function, and it is to this end that James emphasizes the static nature of

conception.

The rigidification of the conceptual system is necessary to ensure that there will be a mental 'carry-over' of essential elements from one perceptual experience of an object to the next. If we never have the same perception twice, we must have some means of recognizing that we are in fact perceiving the same object. The sensible world of the final philosophy (contrasted with the sensible world of the Principles) is a fluid world and the importance of a stable conceptual ability increases as a direct function of the amount of visible change allowed to 'really' take place in the concrete world.

The 'play' between perception and conception facilitates the development of broad scientific systems; at the same time we return to live in our 'biographies'. The isolation of the so-called common elements of experience in conception, and our tendency to seek uniform underlying causal explanations to account for phenomenal experience, leads to the development of scientific/mathematical/logical theories which purport to 'explain' that appearances in this sense do not conflict with our 'ordinary' experiences so that we can move through the two worlds at will:[6]

> Biography is the concrete form in which all that is is immediately given; the perceptual flux is the authentic stuff of each of our biographies, and yields a perfect effervescence of novelty all the time. New men and women, books, accidents,

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6. They do not conflict unless we declare one or the other 'real' and then they become incompatible as Ayer pointed out in his example of the solid brown table and the colourless electron cloud that physics declares it to really consist of (see Ayer, 1968, p. 333). James allowed for this in his 1890 assertion that men of science forget theoretical abstractions when the sensible world makes demands upon their attention (see James, 1890, 2, p. 294). Both sub-worlds demand recognition as the 'real' world, and only one can be 'answered' or ratified at any given moment. Finally, James gives no indication that he is rescinding his 1890 conclusion that the world of sense is typically selected as the 'most' real world.

> events, inventions, enterprises, burst unceasingly upon the world. It is vain to resolve these into ancient elements, or to say that they belong to ancient kinds, so long as no one of them in its full individuality ever was here before or will ever come again. Men of science and philosophy, the moment they forget their theoretic abstractions, live in their biographies as much as any one else, and believe as naively that fact even now is making, and that they themselves, by doing 'original work', help to determine what the future shall become (James, 1911, pp. 151-152).

James appears to have reverted back to the 'separate realities' system he developed in the Principles (see James, 1890, 2, pp. 291-302). But there is a significant difference: the mutable character of the physical world is conceptualized so that the novelties manifested in perception are theoretically contrasted with ideas about their underlying causes. Science and perception cannot be resolved into complementary tasks through the processes of discovery because the goal of science is to determine what the laws are that underlie novel perceptual experiences. At the experiential level, there is a sharp distinction between our apprehension of sensible novelty and the scientific theories we develop to provide an underlying unitary basis for the appearances of things:

> So far as physical nature goes few of us experience any temptation to postulate real novelty. The notion of eternal elements and their mixture serves us in so many ways, that we adopt unhesitatingly the theory that primordial being is inalterable in its attributes as well as in its quantity, and that the laws by which we describe its habits are uniform in the strictest mathematical sense. There are the absolute conceptual foundations, we think, spread beneath the surface of perceptual variety. It is when we come to human lives, that our point of view changes. It is hard to imagine that 'really' our own subjective experiences are only molecular arrangements, even though the molecules be conceived as beings of a psychic kind. A material fact may indeed be different from what we feel it to be, but what sense is there in saying that a feeling, which has no other nature than to be felt, is not as it is felt? Psychologically considered, our experiences resist conceptual reduction, and our fields of consciousness, taken simply as such, remain just what they appear, even though facts of a molecular order should prove to be the signals of the appearance (James, 1911, pp. 150-151).

Our viewpoint changes according to the 'reality' we are participating in at any given time, so that novelty is perceived and experienced at the concrete physical level; at the same time our conceptual faculties allow us to organize the world according to eternal postulates. Our conceptual 'maps' and perceptual experiences serve us in different and equally important ways, and the two merge in a psychological, or experiential sense. This, too, is the viewpoint of the Principles, but James' conception of the physical world is substantially changed, and he now presents the paradigm as stating a problem rather than providing a resolution. While the phenomenal appearances of change are now taken to indicate real changes, these changes cannot be assimilated into orderly descriptive conceptions about reality:

> I have already compared the live or perceptual order with the conceptual order from this point of view. Conception knows no way of explaining save by deducing the identical from the identical, so if the world is to be conceptually rationalized no novelty can really come. This is one of the traits in that general bankruptcy of conceptualism...--conceptualism can name change and growth, but can translate them into no terms of its own, and is forced to contradict the indestructible sense of life within us by denying that reality really grows (James, 1911, p. 152).

James' theory of novelty depends upon the complementary idea of the concatenated universe. There are many systems of concatenation that hold the universe together and these systems are partial while each 'event' belongs to many systems (see James, 1911, pp. 129-131). Thus we are capable of moving from one type of event to another: the concatenated systems are reminiscent of the regions of reality described in the Principles but in that work, the discussion was confined to the psychological possibilities for reality, and the realities themselves were only tenuously linked through the sentient consciousness. The concatenated universe includes all possibilities for relationships between events, and the events include physical and mental objects. In this

sense, the notion of the concatenated universe seems to be composed of that totality designated as pure experience in radical empiricism. It is therefore necessary to determine whether the concatenated universe of the final philosophy has more in common with the concept of pure experience, or with the system of realities given in the Principles, in order to discover how James might have intended to resolve the problem of how conceptions 'know' the mutable world of perception.

If the concatenated systems described in the final philosophy seem to have most in common with the pure experience hypothesis, there are several arguments that tell against such an analysis and lead to the conclusion that James was only concerned with demonstrating the functional relationships between events without saying anything about their ontological status. He intended to emphasize the non-determinative aspects of the relationships between events so that he could show that novelty is a fundamental aspect of the universe. The partial systems of the concatenated universe hang together in such a way that the individual is able to move from one area to another without losing his personal continuity, and in the following statement, James limits the universal connections between things to gravitational forces:

> From the point of view of these partial systems, the world hangs together from next to next in a variety of ways, so that when you are off on one thing you can always be on to something else, without ever dropping out of your world. Gravitation is the only positively known sort of connection among things that reminds us of the consolidated or monistic form of union. If a 'mass' should change anywhere, the mutual gravitation of all things would instantaneously alter (James, 1911, p. 131).

It seems clear from this that James had given up on making ontological statements concerning the status of the objects and relations that make up the concatenated universe. Instead, he now states that perception gives us an idea of what causal agencies might be like, but it may not provide us with any clear-cut examples of them. The

next step in James' quest for the determinants or 'causes' of novel events lies in an examination of mind-brain events. Willed actions, he believes:

> reveal the nature of causation, but just where the facts of causation are located may be a further problem. With this further problem, philosophy leaves off comparing conceptual with perceptual experience, and begins enquiring into physical and psychological facts (James, 1911, pp. 216-217).

In the Principles, James stated that it was impossible to determine whether the expenditure of effort was a truly free volitional act or whether the expenditure was determined (see James, 1890, 2, pp. 571-572). Therefore, the question of free-will could not be resolved in the context of empirical psychology. Now he is saying that willed actions at least have the appearance of constituting real causes, and thus appear to be productive of real novelty, but whether or not this is the case can only be determined through an analysis of mind-brain relations:

> Perception has given us a positive idea of causal agency but it remains to be ascertained whether what first appears as such, is really such; whether aught else is really such; or finally, whether nothing really such exists. Since with this we are led immediately into the mind-brain relation, and since that is such a complicated topic, we had better interrupt our study of causation provisionally at the present point, meaning to complete it when the problem of the mind's relation to the body comes up for review (James, 1911, p. 217).

The Return to Dualism

Unfortunately, James never got back to the mind-body problem. So far, we have attempted to show that James' final philosophy ratifies many of the structures of the psychology, and that James himself referred back to the psychology for empirical support for his final metaphysic. If this approach is valid, it may then be possible to return to the Principles for some indication of how James planned to treat the mind-body problem in his last work. We have shown that James believed that the physical nervous system was a plastic, mutable,

developing network, describable in evolutionary terms (see Chap. 3, pp. 142-148). This view of the nervous system supported an evolutionary interpretation of biological development. At the same time, it enabled James to account for the resumption of functioning over a period of time by an organism whose brain had been partially ablated. On the one hand, the nervous sytem could be viewed as a mechanical assembly of neurons; on the other, it could be taken as a mutating, interrelational system, adaptive in itself, and as such, a 'suitable' organ of consciousness. Such a view of the nervous system could be potentially productive in an attempt to show that novelty was a product of physical growth and change for as Marshall writes:

> James did not deny that higher states emerge from lower. He merely denied that the transformation from lower level multiplicity to higher level unity occurs in the mind; and more particularly, he objected to the view that higher states can be regarded as 'and-summations' of the lower (Marshall, 1974, p. 306).[7]

Marshall's comment on James' position regarding the relationship of consciousness to the nervous system is applicable to James' final philosophy as well as to his psychology for James once again saw panpsychism as a problematic doctrine:

> If we took these [active and perceptual] experiences as the type of what actual causation is, we should have to ascribe to cases of causation outside of our own life, to physical cases also, an inwardly experiential nature. In other words we should have to espouse a so-called 'pan-psychic' philosophy (James, 1911, p. 218).

James' rejection of panpsychism as a complication to be avoided (see James, 1911, p. 218), lends some support to the hypothesis that he may have intended to enlarge on the model of mind-brain relations developed in the Principles, and it also serves as a warning that he did not

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7. Marshall is commenting on James' rejection of both the mind-dust theory and Fechner's panpsychism in the Principles.

intend to develop a model wherein the nervous system could be imbued with a kind of 'biological' consciousness or knowledge of its own, any more than he had in the Principles.[8]

But there are problems with concluding that James intended to ratify the psycho-physical parallelism of the Principles in his final philosophy. As Wild points out, James had never been satisfied with the doctrine (see Wild, 1969, p. 371), and in fact 'broke through it' in certain portions of the Principles (see James, 1890, 1, p. 301; 2, pp. 442-485), so that the concept of the 'living body' originates in the psychology (see Wild, 1969, pp. 365, 376). Wild therefore believes that the notion of the 'living body' acts as the resolution of James' difficulties with psycho-physical parallelism and in conjunction with James' conception of the 'lived biography', acts as a concretization of the ontological equation between thoughts and things (see Wild, 1969, pp. 370-372). At the same time, Wild admits that James did in fact incorporate a kind of atomism into his conception of pure experience in his effort to ontologically equate thoughts and things. Wild points out that James spoke of "mere bits of pure experience" and "a unit of pure experience" which is neither a physical nor a mental fact,...At one point he even refers to these pure experiences as 'so many little absolutes' without relations to anything outside" (Wild, 1969, p. 367;

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8. James kept to this model throughout the Principles--the only exception being the theory of emotion. James based his psychology on a positivistically defined empirical parallelism between mind and brain:

> we must...ask ourselves whether, after all, the ascertainment of a blank unmediated correspondence, term for term, of the succession of states of consciousness with the succession of total brain processes, be not the simplest psycho-physic formula, and the last word of a psychology which contents itself with verifiable laws, and seeks only to be clear, and to avoid unsafe hypotheses (James, 1890, 1. p. 182).

see also James 1904/1967a, p. 15; 1905/1967b, pp. 127, 134). Wild justly claims that these atomistic absolutes violate James' theory of the fringe relations between all 'parts' of experience. Furthermore, Wild claims, the 'little absolutes' make no connection with the concrete world as James' broad theory demands (see Wild, 1969, pp. 367-368). In spite of these difficulties, however, Wild believes that James' conception of the 'living body' was successful and eventually productive for phenomenology (see Wild, 1969, pp. 377-378).

Wild does not discuss James' final philosophy at all and this is unfortunate because Wild's comments on whether James' conception of the living body is carried over into the final philosophy would no doubt have aided the attempt to clarify James' intentions. Briefly then, the problem is to decide whether James intended to ratify the psycho-physical parallelism of the Principles--unsatisfactory as that position might be--or whether he intended to build on the concept of the living body.

There is good reason to believe that James was in fact moving back towards a position similar to his early psycho-physical parallelism. Granted, James abjures positivistic science in his last work, claiming that such a position only includes descriptive and predictive accounts of natural phenomena without connecting them in any ultimate sense (see James, 1911, p. 203). At the same time, he recognizes that the analysis of perceptions alone reveals the nature of events without revealing their causes (see James, 1911, p. 216). Perception cannot therefore be used as the means of arriving at explanations for events; to use it in this way leads to panpsychic accounts wherein concrete objects come to be imbued with "an inwardly experiential nature" (James, 1911, p. 218). He had already made a break between thoughts and things when he postulated that percepts and concepts were made of the same stuff

When this statement is combined with his conclusion regarding the nature of causation, it seems clear that James is once again moving towards a position wherein the appearances of events must once again be separated from their underlying substrates. The experiences of the living-body complex are used solely as a guarantee that activity, novelty, and temporality are real qualities of the world. The exploration of the causes of these events--the 'new' rationalization of the world--now demands a separation between appearances and substrates.

It is also interesting that James felt it necessary to ratify once again the doctrine of the will to believe in his final philosophy. He instructed that a series of notes, entitled "Faith and the right to believe" be included in Some problems of philosophy and they were therefore given as an appendix (see James, 1911, p. 221). James insists that the will to believe in a pluralistic universe is the most important precursor in actually creating the pluralistic universe (see James, 1911, pp. 229-230). Once more, James has ratified the importance of human volition, and once more, he has implicitly incorporated a tension between the efficacious consciousness and the physical world of objects and relations into his world-view.

The final 'evidence' that James was returning to the dualistic position of the Principles lies in the relationship between percepts and concepts and the two types of knowledge they generate about the world. James insists that percepts and concepts are substantially continuous, so that experientially, they merge into one another and the individual has difficulty in knowing where perception ends and conception begins (see James, 1911, pp. 107-109). At the same time he insists that concepts are fixed, static, inactive; they are abstractions from the perceptual life and their content is always 'borrowed' from experience (see James, 1911, pp. 79-82). He concludes from this

that concepts should only be used when they aid in understanding events and that they should be dropped when they hinder it. Perceptual reality should thus be taken up into philosophy as it comes (see James, 1911, p. 95).

How perceptual reality is to be taken up into conceptualization 'as it comes' presents a major problem for James and it is a problem that results directly from James' definition of the functions and genesis of conception. He limits his discussion of the growth of conception to its powers to designate selected qualities of the physical world and to apply these generally to the wide range of unique objects. The qualities of the mutable world thus become fixed; concept-stuff is made up of ideas which are abstractions not directly apprehended in the particulars of experience:

> Nothing happens in the worlds of logic, mathematics or moral and aesthetic preference. The static nature of the relations in these worlds is what gives to the propositions that express them their 'eternal' character: the binomial theorem, e.g., expresses the value of any power of any sum of two terms, to the end of time.
>
> These vast unmoving systems of universal terms form the new worlds of thought....The terms are elements (or are framed of elements) abstracted from the perceptual flux; but in their abstract shape we note relations between them (and again between these relations) which enable us to set up various schemes of fixed serial orders or of 'more and more'. The terms are indeed man-made, but the order, being established solely by comparison, is fixed by the nature of the terms on the one hand and by our power of perceiving relations on the other. ...the result being those skeletons of 'rational' or 'necessary' truth in which our logic- and mathematics-books (sometimes our philosophy-books) arrange their universal terms (James, 1911, pp. 68-70).

Further, James writes that:

> The conceiving order of nature built round the perceived order and explaining it theoretically, as we say, is only a system of hypothetically imagined thats, the whats of which harmoniously connect themselves with the what of any that which we immediately perceive (James, 1911, p. 66).

When concepts are juxtaposed, new rational relations appear between them which connect them in intimate ways. James writes that these new connections among concepts arise from "our faculty of comparison

and of our sense of 'more'" (James, 1911, p. 67), and he then refers the reader back to the Principles for his account of the genesis of the new relations:

> 'THE PURE SCIENCES EXPRESS RESULTS OF COMPARISON exclusively; comparison is not a conceivable effect of the order in which outer impressions are experienced--it is one of the house-born portions of our mental structure; therefore the pure sciences form a body of propositions with whose genesis experience has nothing to do (James, 1890, 2, p. 641).

James concluded in the Principles that the mind is assailed in two ways: through experience and through spontaneous, or 'brain-born' processes. This dualistic model of the genesis of mental tendencies is used to account for the individual's adjustment to the world as it is, and his opposing tendencies to reconstruct the world in scientific, ethical and metaphysical terms.[9] In Some problems of philosophy James appears to ratify this early dualism in order to strengthen the functional distinction between percepts and concepts and to show that our great intellectual systems lead us into conflict with the data of experience. This contrasts with the account of the relationship between necessary truth and perception in the Principles where James endeavoured to show that the necessary truths, used in scientific/logical theories, facilitate the rationalization of the physical world through the process of discovery (see Chap. 4, pp. 261-276).

By the time he came to write Some problems of philosophy, James had come to believe that the orderly rationalization of the physical world, given in terms of the discovery of objects and events which

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9. While both processes are conceived of as having natural, physical causes, James insists that they belong to different physical spheres; the first mode of influence comes from the external world of experience; the second includes molecular accidents in the brain before birth and the accidental results of more direct influences working in the unstable and delicate brain tissue (see James, 1890, 2, p. 627).

correspond to conceptual abstractions, presents a false view of what the physical world is really like, because it neglects the real appearances of novel events over time. But he simultaneously ratifies the 'rationalistic' strand in his philosophy in his account of the genesis and function of the necessary truths, and in his definition of conception. The problems that he encounters in his search for an effective means of conceptualizing the pluralistic universe therefore largely arise because he insists that relations within the sub-world of the necessary truths and ideal relations are static. In short, he is caught on the two horns of a dilemma: we have already seen that James defined concepts as static objects in order to ensure that the object and its properties could be recognized when the object subsequently reappeared (in various disguises) to the perceiver (see James, 1911, pp. 104-106). He therefore reversed the traditional nominalist doctrine to argue that our ideal meanings are always the same, while our perceptual experiences are always novel (see James, 1911, pp. 104-106), But he was then faced with the problem of how the temporal mutable perceptual flux could be rationalized while still retaining its temporal mutable properties. That is, he was seeking a way to conceptually rationalize the physical world in temporal mutable terms, while his definition of the function of conception would already appear to preclude success in this venture (see James, 1911, p. 152; quoted above p. 670). At the same time, he realized that perception could not be used to determine the nature of any underlying causes which are responsible for the shifting phenomenal flux (see James, 1911, pp. 216-217), so that he ended his last work with the intention of taking up these problems once again from the perspective of mind-body relations.

It is impossible, in the end, to really construct hypotheses about what James intended to make of mind-body relations in the final

philosophy. All that can be reasonably concluded is that he was starting once again to make qualitative separations between events, and that he had given up on proposing pragmatic solutions to 'real' metaphysical problems. If his pluralistic universe was really going to come into being, James now seemed to feel that the work involved in making it real would be sober, strenuous, and scientific. His pragmatism and his radical empiricism provided him with the 'outline' of the pluralistic universe, and it was now time to begin building it.

The hypothesis that James was embarking on a new phase of philosophical development is difficult to substantiate by appeal to the literature because so many modern theorists end their analysis of James' philosophical career with a discussion of radical empiricism and do not consider Some problems of philosophy at all. Some problems of philosophy did not attract a great deal of critical comment when it was published, possibly because it appeared so soon after James' death, at the time when James' colleagues were most concerned with paying tribute to his wide-ranging achievements.[10] And modern theorists who do consider Some problems of philosophy tend to treat James' final philosophy as an extension of the doctrines laid down in pragmatism, pluralism, and radical empiricism.

Dooley summarizes James' contrast between monism and pluralism, showing that according to James, monism gives the more 'rational' view of the world, while pluralism is more empirical, agrees with the experiences of the 'whole man', and can triumph over monism if any evidence of discontinuity is discovered. Pluralism is therefore more ultimately

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10. Those theorists who reviewed Some problems of philosophy tended to summarize the contents of the book and to end with a tribute to James' philosophical achievements (see Miller, 1911, pp. 240-241; Schiller, 1911, pp. 571-573; Jastrow, 1912, pp. 12-14; and Lindsay, 1912, pp. 489-492).

rational because it agrees with perceptual and moral experience (see Dooley, 1974, pp. 149-151). Brennan makes similar use of the final philosophy: he states that James shows that the conceptualist view of the universe means that effects cannot be novel because the effect exists in the cause. This limits the options for free will. Brennan takes the final philosophy as a fitting conclusion to James' radical empiricism and submits that James confirms the role of human volition in shaping the world. The perceptual flux contains "masses of moral data" (Brennan, 1961, p. 105), and perception therefore has as crucial a role to play as abstract conceptualization in generating ethical postulates (see Brennan, 1961, pp. 41-43, 105). Stroh simply summarizes James' view that experience must be brought back into philosophy (see Stroh, 1968, pp. 150-151).

Wilshire intentionally limits his discussion to the Principles, and states only that James' discussion of percepts and concepts--as given in Some problems of philosophy--is a 'tangled web' (see Wilshire, 1968, pp. 208, 247). Ayer gives a more detailed analysis of the problems of percepts and concepts, claiming that while James believes his theory is opposed to Kant's, in fact his work shows agreement with Kant's dictum that a basic principle is needed to unify experience (see Ayer, 1968, p. 289). Ayer believes that James presents a consistent view of the derivation of concepts from percepts and the dependence of concepts on percepts for verification (see Ayer, 1968, p. 289). At the same time, Ayer shows that James is inconsistent regarding the 'distinguishable' character of percepts from concepts: James tends, when treating concepts by themselves, to distinguish them sharply from percepts, and Ayer believes that it was this tendency that drove him into the irrationalism of the Pluralistic universe (see Ayer, 1968, p. 289). He also shows that James' commitment to a Platonic definition

of conception is inconsistent with his later conclusion that experience must be taken as a fusion of two elements--the raw material of percepts and the intellectual abstractions of concepts. In spite of his Platonic phraseology, Ayer claims, James continued to present the case for the cognitive construction of physical reality out of perception. Furthermore, concepts are valuable for their cash value alone--concepts make inferences about the future, and are verified through actions (see Ayer, 1968, pp. 290-291).

Marcell believes that the appearance of meliorism in the pragmatism acts as a preface for the long discussion of novelty in Some problems of philosophy. Meliorism therefore acts as the prelude for James' notion of the evolving pluralistic universe (see Marcell, 1974, pp. 173-174). Meliorism, as a developed philosophical statement acts as the extension of pragmatism, pluralism, and the will to believe, and Marcell uses Some problems of philosophy to show how these elements are integrated into a final statement regarding the mutable temporal nature of the universe (see Marcell, 1974, pp. 189-190).

Certainly, as Ayer, Wilshire, Dooley, Brennan, and Marcell indicate, James' final philosophy can be interpreted as a last attempt at integrating the various strands of his philosophy. The question that arises is whether or not it is something more than this. Was James in fact entering a new phase of philosophical development as Perry indicates, or is the final philosophy simply a tying together of the loose strings of the whole corpus of James' work? The former hypothesis seems to be the most promising. Although James' final philosophy contains several problematic constructions--most notably the problems of distinguishing between the functions of percepts and concepts and the tendency towards rationalism in defining the structure, and by extension, the functions, of concepts--Some problems of philosophy does

present an outline of 'where to go next' in searching out the elusive relationship between the temporal mutable world and the similarly temporal mutable mind. James' admission that mind-body relations are the critical issue, and his insistence that the subject must be studied from the perspectives of psychology and physiology as well as philosophy is important for all social scientists. The importance he attaches to the study of these relations in conjunction with his revival of the will to believe in unverified hypotheses has the implicit effect of including science at last in the pursuits which demand human effort. If James' pluralistic universe is to become a reality, the rationalization of the new world will depend on the acceptance of temporalism and mutability as characteristics of the mind and the physical world it knows at all levels of human endeavour.

Conclusions and Retrospect

We have come at last to the end of our analysis of James' psychology and philosophy. The analysis has been highly selective for it has been based on the attempt to study those aspects of James' psychology and philosophy which best exemplify the progressive development of his conception of consciousness and its relationships with the worlds it knows. As the preceding pages have shown, James' conception of consciousness underwent several stages of development, and it is more appropriate to talk about his conceptions of consciousness. Correspondingly, the nature of the realities known by consciousness was redefined as James developed his world-view.

James began his career with an avid enthusiasm for Darwin's theory of evolution. So caught up was he in the exciting development of the science of his day that he briefly espoused an automatist view of mind

for a time. But he found himself unable to sustain this position, and fell into a state of depression that was to last for two years. He found solace in Renouvier's doctrine of free will, and set about developing a conception of an efficacious consciousness that could take its place in the world of evolutionary science. In 1878 he expressed his outrage against automaton theory and propcsed instead that consciousness was 'interested' and that through its interests, it created the world it knew. The early papers were basically polemical[11] and they cannot be taken as systematic accounts of the mind's relationship with nature. Nevertheless they served as the genesis of James' systematic psychology.

The position that the interested consciousness creates its own world could not be sustained in that form. James had to modify his position to allow for the coercive properties of objects on the mind and if he was to be true to Darwin, he had to show that consciousness is equipped with structures (instincts) which facilitate immediate adaptation, and which solidify into quasi-automatic structures (habits). At the same time, his commitment to Renouvier made it imperative that consciousness be given a voice in events and James began to work out a conception of consciousness which would be structurally and functionally compatible with free will. The result of James' labours was the Principles: in this work he reacted against the elementarism of the British associationists to produce a definition of thought wherein the objective and subjective elements could only be distinguished from each other through the secondary process of introspection. At the

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11. The papers referred to include "Remarks on Spencer's definition of mind as correspondence" (1878); "Quelques considerations sur la methode subjective" (1878); "The sentiment of rationality" (1879); and "Are we automata?" (1879).

same time, the continuous, changing. personal, selective, cognitive stream of consciousness was created to describe the global operations of the thinking or feeling process. But consciousness had two major functions: if James succeeded in developing a unified structure for consciousness, he did not succeed in reconciling the functions of consciousness from either a genetic or 'active' perspective. The result was the 'two-man' view, reflected in his theories of reality and volition. The two-man view is further reflected in the epistemological gap that is created in the functional account of perception and conception in the final philosophy.

During the psychological stage of his career, James' view of the physical world remained largely Newtonian, in contrast to his anti-associationist model of consciousness. At the same time, he was becoming disenchanted with psychology as a vehicle for his ideas and his commitment to positivism in science interfered more and more with the analysis of what he considered to be the significant philosophical issues. In order to protect the integrity of the thought itself and the corresponding independence of the objects cognized by thoughts, James had based his psychology on a psycho-physical dualism. Never content with dualism, but unable to find an alternative that did not seem even more problematic, James began to explore the possibility of constructing a system which could function without the supposition of an ontological dualism between thoughts and things. The possibility that the physical world could be conceived in other than mechanistic/mathematical terms had been growing in James' mind before the Principles was completed. He therefore extended the characteristics of his stream of consciousness to describe the workings of the physical world as it is given in perception and affective feeling, his intention being

to breach the gap between man and nature that had developed in the context of the scientific revolution (see Koyré, 1968, p. 2).

But simply creating a parallel between the construction of the mind and the construction of the physical world could not solve the epistemological problems of how the mind came to know the world. James therefore submitted that the epistemological gap could be breached if the thought and the object could be taken as one 'piece' of pure experience so that the separations into subject and object, knower and known, mind and object, followed the experience instead of antedating it. In applying his 'transformed' evolutionary concepts to the physical world James was in essence describing a world that was radically opposed to the orderly, mathematical/mechanical Newtonian universe. Furthermore, James believed that the recognition of novel events could not be integrated into the conceptual system which functioned, by definition, as a reservoir of permanent or universal ideas. If, however, mind and object were taken as one piece of experience, then perceptual information could be taken as bona fide information about what the world was really like.

Radical empiricism was truly a radical philosophical position, and the traditional methods for accumulating knowledge about the sensible world did not appear to lend themselves to discovering the parameters of a universe wherein the nature of physical causes was to be inferred from the psychological experience of the exertion of effort. But James had long been interested in Peirce's pragmatism. Here was a potential methodology for describing the world as he envisioned it: he had already begun to develop his own version of pragmatism with the aim of applying it to some of the problematic metaphysical issues which could not be dealt with in the context of scientific psychology. The pragmatic method appeared to be the answer for 'making radical

empiricism prevail'. Pragmatism was in fact James' most productive contribution to philosophy; the notion that truth was 'made'--that it was not absolute--contributed to the 'relativistic', evolutionary view of reality and experience that was gradually emerging in America and Europe. Within the context of James' own progress the more or less simultaneous development of pragmatism, radical empiricism, and pluralism enabled him to construct a view of the physical world that really was temporal and mutable.

But radical empiricism and pluralism as James describes them in the Essays in radical empiricism and The pluralistic universe are romantic doctrines: while he claimed that the pragmatic method could be used to resolve the metaphysical disputes that stood in the way of their acceptance, he actually made fairly minimal use of the method itself, and appears to have discovered, in any event, that the pragmatic method was mainly useful for setting up the terms of the disputes (see James, 1905/1967d, pp. 176-189). By the time James was writing his final philosophy, he realized that it was necessary to return to psychological, physiological, and scientific analyses of the mind-brain relationships. He had succeeded in establishing a case for a temporal, mutable view of the physical world but found himself enmeshed in the problem of how the mind apprehends this world. James once again found it necessary to reevaluate the functions of percepts and concepts because the world that the mind knows was now radically different from the physical world of the Principles. In this sense, the final philosophy is an extension of radical empiricism and pluralism, and the commentators who treat it as such are justified in their analyses. In another, more important, sense, however, the final philosophy sets the stage for future philosophical developments. When James wrote the Principles, he evolved a conception of mind that took its form

from evolutionary theory and from Renouvier's doctrine of free will, but the world that was known by the mind had more in common with the mechanistic view of the associationists, wherein the phenomenal appearances of objects could not be taken as representing the real nature of underlying causes. James succeeded in outlining a new conception of the physical world where phenomenal appearances did in fact denote real underlying causes even if the nature of the causes themselves was not apparent. And this meant that James was once again faced with the serious task of constructing a psychological account of the mind's relationship to the world.

The pragmatic mergings of thought and object, or subject and object are absent in the final philosophy, and the more traditional dualisms once again begin to reassert themselves while the will to believe is revived as a means for making the pluralistic world 'true'. The final philosophy is not without serious problems: the analysis of mind-matter relations was cut short by James' untimely death, and the reappearance of rationalism in the definition of the structure and function of conception and the necessary truths blocks progress towards the development of a conceptual view of novelty. Simultaneously, problems with the nature of causation limit James' attempts to enlarge his perceptual account of the appearance of novelty into a rational system.

What then, did James achieve overall? This thesis has hopefully presented a coherent picture of James' progress over the years, but has often concentrated on the problems in his theories rather than stressing their productivity. This is the result of several factors. First of all, from the perspective of psychology, James' theories have not prevailed. While he is revered as one of the founding fathers of

modern psychology, his actual theories are usually dismissed as being largely irrelevant to modern practices today. A sharp distinction is made in the histories of psychology between functionalism and the behaviourism that followed it, so that J.B. Watson's manifesto is taken as the dividing point between the 'new' and the 'old' psychologies. James holds the place of the 'wise man' in psychology--eminently quotable to illustrate 'truths' or 'broad philosophical positions', but his work is rarely taken seriously when it comes down to the actual selection of problems for research.

Watson claims that James "helped to give psychology an indigenous vitality and a freedom from the narrowing influences of an exclusively laboratory approach; he served to broaden the field to include the whole wealth of human experience" (Watson, 1978, p. 392). He also points out that James promoted an efficacious model of consciousness while at the same time building his psychology largely around a model of physiological determinism. Thus, Watson ascribes to Allport's 'productive paradox' view of James' psychology and leaves the matter there (see Watson, 1978, p. 392; see also Allport, 1943, pp. 95-120). Boring gives James credit for establishing the first psychological laboratory, but emphasizes his distaste for experimental work. He claims that the only psychological theory of James' that was productive for modern psychology was the theory of emotion because he regards James' account of emotion as basically behaviouristic (see Boring, 1950, pp. 508-517). Marx and Hillix summarize James' psychology briefly and conclude that he "seems sometimes to have had an incredible modernity" (Marx & Hillix, 1963, p. 146) but do not take their analysis any further.

Gardner and Lois Murphy emphasize the evolutionary content of James' psychology in their outline of his major psychological theories (see Murphy & Murphy, 1969, pp. 258-282), thus isolating the single

most important parameter of James' influence. Unfortunately they fail to develop this insight any further. Lowry includes James' theory of instinct in his broad discussion of Darwin's influence on the growth of modern psychological theory (see Lowry, 1971, pp. 125-126), and notes James' rejection of the mind-stuff theory. He claims that James failed to replace the mind-stuff theory with a viable theory of his own and says he will therefore leave the discussion there (see Lowry, 1971, pp. 204-205).

Chaplin and Krawiec outline James' stream of consciousness model and pay tribute to James for his inspirational effect on psychology (see Chaplin & Krawiec, 1974, pp. 41, 52-53, 372-373). They also note that his theory of emotion was soon replaced by the Cannon-Bard model (see Chaplin & Krawiec, 1974, p. 475), so that it ceased to have a viable role in modern psychology. Robinson also states that the James-Lange theory of emotion was "demolished" by Cannon (see Robinson, 1972, p. 231) but he shows that the theory is still applicable to certain aspects of the biological study of emotion (see Robinson, 1972, p. 237), and he also demonstrates that modern theories of instinct preserve the "flavour" of James' earlier version (see Robinson, 1972, pp. 138-139).

The consensus of the major commentators on the history of psychology seems to be that James served as an early innovator for modern psychological theories, yet it is difficult to document the precise influence his work had on the growth of psychology. If James' legacy is largely an inspirational one, then it can perhaps be concluded that rather than providing psychology with specific theories, his importance lies in providing psychology with a new way of looking at the mind and the world. Throughout this thesis we have attempted to show how James' psychology differed qualitatively from the older associationist

paradigms, and have recorded his disputes with traditional psychology. That he helped to change the focus of traditional psychology cannot be denied. Furthermore, we have tried to show that he changed the focus of psychology by having a substantial part in changing our common assumptions about the world and our relationship with that world. This was his major achievement. But he was not altogether successul in dismantling the older psychology: the associationist model still constitutes an integral part of our psychology as Clark L. Hull noted:

> During the two and one-half centuries since the beginning of the English association movement there has been a slow but fairly constant tendency for associationism to stress more and more the aspect of physical reaction. This has reached its logical limit in the behavioristic psychology of America, which, despite its migration to another continent, and its general repudiation by present-day English psychologists, is a genuine and perfectly natural evolution of English associationism (Hull, 1934, quoted in Humphrey, 1951, p.4).

Furthermore, the successful integration of James' broad philosophical position into our modern world-view must be balanced against the internal difficulties of his system. In other words, his attempt to elevate evolutionary postulates into a broad view of the universe and all of its objects, events, relations, etc., was only partially successful. We suggest then, that insofar as it was not successful, some of the answers at least, may lie in an examination of the internal difficulties of James' specific theories. Thus the attempt to analyse these problems was undertaken. In the introduction to this thesis we listed several hypotheses which have now been examined in the foregoing chapters. It is now appropriate to review these hypotheses in a final retrospect.

It was hypothesized that the two major influences on James' career were Darwin and Renouvier. This hypothesis cannot be actually substantiated by a textual examination of James' work for two reasons. In the first place, James made few explicit references to the works of

either Darwin or Renouvier in comparison to the number of references to other thinkers.[12] In the second place, James' 'extroverted' approach to psychology and philosophy makes an attempt to isolate one or two particular thinkers as 'the' major influences, appear initially to be an exercise in futility; typically James scholars selectively concentrate their attention on those figures who appear to have the most determinative influence on isolated strands of James' work.[13] Given these restrictions, the attempt was made to show that James' work was consistently directed by his commitment to two major positions --that evolutionary theory provided the basis for a psychology describing man's relationship to the natural world, and that consciousness was efficacious. And that James was committed to these two propositions has been supported by the examination of the structures and functions of consciousness, the psychological theories of reality, instinct, and emotion, the will to believe, the epistemology of pragmatism, and the metaphysics of radical empiricism and pluralism. Furthermore, the problem of the inconsistencies or 'paradoxes' in James' work has been discussed as a tension between the 'demands' of the two commitments. When James' psychology is analyzed with respect to his joint commitment to Darwinian evolution and Renouvier's free-will hypothesis many of the inconsistencies disappear as individual anomalies and reappear as symptoms of the overriding tension between the two positions. Taking Darwin and Renouvier as the critical influences on James' thought is therefore at least justified on a pragmatic basis.

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12. Note, for example, references to the Mills, Locke, Lotze, Spencer, Bergson, Bradley etc.

13. For example, Perry basically selects Renouvier and the British empiricists, Kuklick selects Royce, Kraushaar selects Lotze, Wiener selects Darwin and Thayer selects Peirce.

Royce stated that biological evolutionary theory was transformed into a philosophical theory in the late nineteenth century and that James had a major role in making the transformation between the two stages of evolutionary thought (see Royce, 1911/1969, pp. 10-14; quoted above, pp. 100-101). That this is a valid and important interpretation of James' achievements has been taken as the substantial theme of this dissertation, so that we have studied James' philosophical and psychological development with the aim of showing how the transformation was achieved. Under the dual influence of Darwin and Renouvier, James set out to create a conception of consciousness that was both naturalistic and efficacious. This attempt was significant, given that the first reaction to evolution had been the emergence of an automaton view of mind. Darwin and Spencer ratified a mechanical, associationist model of mind, and James' construction of a new conception of consciousness constitutes one of the first major elevations of evolutionary theory to Royce's second, philosophical stage.

Pragmatism was treated as an evolutionary epistemology, and it was shown that its genesis (in the discussions of the Metaphysical Club) was dependent upon the particular selection and subsequent transformation of biological postulates into a philosophical position which denied the validity of absolute conceptions of truth and meaning. In the same vein, radical empiricism and pluralism constitute James' attempts at an evolutionary metaphysic, wherein he applied the concepts of temporality and mutability to real events and causes in the physical world.

The next hypothesis can be taken as an extension of Royce's statement: we made the claim that James and his contemporaries were struggling to make changes in the common assumptions about the nature of the universe and man's place within that universe. In other words,

James wanted to create a new world view.

The pre-evolutionary world view was examined in terms of the notion that each era is guided by certain common assumptions about what the cosmos is really like. It was hypothesized that these common assumptions dictate the scope of research and the interpretation of the 'data', so that the common assumptions serve the function of defining research paradigms by selectively focusing the mind on specific issues while excluding others.

The 'common assumptions' model is a broad attempt to isolate some of the fundamental 'guiding' assumptions of the pre- and post-evolutionary eras. In this model, the scientists and theoreticians are discussed as participants who ratify, elaborate, and very occasionally reject the guiding assumptions of their age. These assumptions are broad, general principles, comparable perhaps, to James' broad metaphysical axioms, which provide directionality without having much in the way of specific content themselves. This lack of specific content means that the assumptions are plastic: they allow for the inclusion of new data so that as science progresses, their exact 'meanings' for research change over time. They are supported by the contents of research and scholarship at all levels and they link the contents of specific disciplines together. They must be resistant to change[14] and that they <u>are</u> resistant to change is demonstrated by James' difficulties in breaking away from the Newtonian model--first in psychology, and later during his long journey towards the redefinition of the physical world. James' lapses into rationalism, elementarism, his early ratification of the primary and secondary qualities doctrine, and his romanticism are all evidence of the difficulties he

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14. See Kuhn, 1970, pp. 41-42 on the quasi-metaphysical aspects of scientific paradigms.

encountered in his efforts to dismantle the common assumptions. That James did intend to change the way men thought about mind and the physical world is evident in all of his writings. There is a strong polemical strand that runs throughout his work: he exhorts men to believe in free will, to return to perception as the basis of knowledge, to affirm pluralism, and to use the pragmatic method to solve metaphysical issues. Directed towards the same end are his diatribes against automatism, against atomistic associationism, against Absolutism, and against the notion of a monistic block-universe.

In Chap. 1 we claimed that the common psychological assumptions of the pre-evolutionary thinkers consisted of a mechanical/mathematical view of the universe which was accompanied by an atomistic reductionism. 'Psychological' accounts of thought process were given in terms of a 'universal subject' and philosophers made an explicit separation between the animal 'mind' and at least the 'higher' forms of human reasoning. By the mid-nineteenth century, mental philosophers were largely promoting an elementaristic account of mind, and the tendency towards passive sensationalism in the empiricist position was easily transformed into an automatist view of mind by the early evolutionists.

James attempted to 'demolish' all of these assumptions during his career: more importantly, he devised new structures with which to replace them. He ranted against automatism and against many of the principles of associationism, advocating a definition of thoughts as unitary constructions with the stream of consciousness as the vehicle of thought in place of the earlier concepts. He rejected the theory of innervation and constructed a model wherein knowledge of the physical world and the individual's effects upon that world were both described in afferent terms. He emphasized individual differences in his psychology, detailing personality differences in his theories of

volition, reality, emotion, reasoning, instinct, etc. He defended the unique nature of each thought, each feeling, each perception, and his lapses into rationalism regarding the status of conception and the necessary truths often appear as striking inconsistencies within the broad context of his system.

James' whole philosophy was an attempt to reunite man and nature: man was no longer to be cut off from his biological origins, and human perceptions were to provide the 'givens' of knowledge about the external world. Man's adaptation to the world was therefore of critical importance and James promoted theories of instinct and psychogenesis which dictated that man's plastic capacities were products of evolutionary processes. Volition with effort was given the function of bringing mind and nature into a closer relationship so that the epistemological gap between mind and nature would eventually be closed. Man is thus given an active role to play in the continuing evolution of the universe, for James proclaimed the efficacy of consciousness in facilitating adaptation and in making new ideas 'true'.

Finally, James discarded the mathematical/mechanical view of the universe in favour of a 'temporal mutable' view. The new world view would have as its common assumptions: 1) the recognition that each object, relation, event, and thought is unique; 2) the essential unity of man and nature; and 3) the concept that perception, not abstract conception nor universal law, best described the actual workings of the universe. It would also be recognized within the new world view that 4) qualitative changes in the universe take place through time so that the universe is characterized by the appearance of novelty; and that 5) man has a real role to play in the construction of the universe: free will would be taken as a real possibility so that man would regard himself as an efficacious participant in the evolving

universe and not as a passive observer of the gradual pre-determined unravelling of the universe.[15]

Finally, did James succeed (along with his contemporaries) in facilitating a shift in the common assumptions, and was his psychological-philosophical system sufficient in itself to stand as the basis for a new world view? Certainly the twentieth century world-view has undergone a radical shift and this shift is conventionally attributed to the success of evolutionary theory and the emergence of relativity theory in physics. Broadly speaking, then, James and his contemporaries had a major role in shifting the focus of western thought. The universe is regarded as an evolving system, individual difference provide one of the cornerstones of the social sciences, psychology is once again emphasizing the active functions of mental structures in cognition (largely through the acceptance of the Piagetian model which has roots in Baldwin's work--see Russell, 1978), and scientific and philosophical 'truths' are studied to reveal the changes they exhibit over time (notably Kuhn's work on paradigm shifts), so that the pragmatic theories of truth and meaning are coming into their own, granted in modified forms.

Kuhn emphasizes that after a scientific revolution has taken place, phenomena are perceived in new ways, and he makes an analogy between these broad intellectual shifts and Gestalt phenomena: the event or object is now seen as 'something else'--it has a new meaning and the old meaning simultaneously disappears with the apprehension of the new. At the same time, paradigm shifts are never complete

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15. It should be noted that not all of these common assumptions were shared by the early pragmatists, particularly in regard to free will. The early pragmatists did agree on the importance of establishing that the world changed over time as a basic assumption in their philosophy. See Chap. 7 for the account of the agreements and disagreements between the members of the Metaphysical Club.

upheavals so that many models, postulates, and pieces of data are carried along into the new paradigm; the price of admission is that they now have different relations to the new paradigm than they had to the old, or else they yield new concrete results in the new paradigm (see Kuhn, 1970, pp. 111-135). The 'new' world-view did not do away with either associationism nor reductionism; rather both conceptions are used in qualitatively 'new' ways in modern science. The associationism of Clark L. Hull is not the associationism of John Stuart Mill, and Kuhn's model would attribute these differences to the new relations the old model has to the new paradigm, and to the new concrete results yielded when new methods are grafted onto old models. The concretization of a world-view therefore includes decisions on the part of theorists as to which portions of the declining view can be productively 'revitalized' in the new framework, and which portions have been 'disproven' and must therefore be discarded.

The 'scope' of twentieth century thought was largely determined by the crisis which developed in physics in the late nineteenth century and, according to Kuhn, paved the way for the emergence of relativity theory.[16] It was stated earlier that James' view of the physical world was centered on human consciousness in part because he believed that consciousness formed the 'axis' of the world, and in part because he lacked a new physical theory to support his attempts to redefine the structure of the physical world. The theory he lacked was in fact emerging in physics at the time he wrote, but he did not live long enough to become aware of the revolutionary implications of quantum physics and relativity theory. The 'success' of relativity theory precluded

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16. See Kuhn, 1970, pp. 72-75 for a description of the crisis in physics.

any likelihood that scientists would turn to James' theory of perception as a means of rediscovering and lawfully describing the properties of the physical world. Reductionism and elementarism took on new meanings in the new paradigm of physics, and were 'reinstated' in the sciences in general.[17] The success of relativity theory ensured, finally, that the new world view would continue to be dominated by progress in science, while James' philosophy progressively tended to reduce the role of science as the vehicle of discovery.[18] In short, whether or not James' broad system was sufficiently viable to provide a significant part of the basis for a new world view, historical circumstances went against the concretization of a new world-view along specifically Jamesian lines.

The potential role of James' writings in directing the shift in world-view was also vitiated by the problems which are left unresolved in his work. On the 'plus' side of the balance sheet, he has to his credit the conception of a unitary definition of thought or feeling and the stream of consciousness as the vehicle of thought. His emphasis on the pluralistic, temporal nature of the universe was an extremely productive conception as was his notion that the efficacious qualities of consciousness are guaranteed by the structural nature of consciousness itself and its interactions with the world. The success of his pragmatism speaks for itself. Finally, James' long struggles with dualism are among his most important legacies. He showed that epistem-

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17. See Mackenzie, 1977, pp. 24-27, for a discussion of the effects of physics on early twentieth century psychology.

18. Science plays a primary role as the vehicle of discovery in the Principles. Its role is diminished in the pragmatic, radical empiricist, and pluralistic writings and it is not until the final philosophy that James once again gives science a primary role in resolving theoretical problems.

ological 'cuts' must finally be made so that the knower is distinguished from the object he knows. But he also showed that the demarcations between knower and known are blurred so that the precise point where the cut is made is determined by human demands; it is not absolute.

On the negative side of the balance sheet are the problems James failed to resolve to the satisfaction of his audience, and often himself. His insistence on leaving an opening for free will in his psychology led to protests from his contemporaries over the inclusion of metaphysics in psychology, and James' corresponding failure to devise naturalistic accounts of the faculties--notably in regard to the inclusion of the mysterious fiat of effort--'weakened' his attempt to develop an over-all scientific account of psychology at a time when experimental methods were rapidly developing and commitment to their efficacy was strong. Thus, his psychology was praised for its vivid accounts of experience by some and damned for its subjectivity by others.[19] His psychology included a variation of the reflex model of the associationists, and a commitment to the efficacious nature of mind. These two seemingly incompatible conceptions were incorporated into the psychology to provide a scientific account of action while at the same time ensuring that the mind did not function as a sterile epiphenomenon, or, as Kuklick says, to ensure that "the motor theory of consciousness did not reduce mind to behavior" (Kuklick, 1977, p. 186). The problem is that James' scientific and 'ethical' commitments produced a functional dualism instead of a resolution of the tension. In general, James' psychology was criticized as being too metaphysical,

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19. See for example, Baldwin, 1891, pp. 357-371; Hall, 1891, pp. 578-591; Meyers, 1891, pp. 111-133; Peirce, 1891, pp. 32-33; Royce, 1891, pp. 143-169; Santayana, 1891, pp. 552-556; Sully, 1891, pp. 393-404; and Ladd, 1892, pp. 24-53.

and too impressionistic to represent the emerging science; at the same time, the book was widely read and adopted as a text by many of James' contemporaries and many theorists still regard it as the 'greatest' psychology book we have.

The objections to James' subjectivism must also be balanced against the substantial contributions he made to psychology as an empirical science. While he had a personal dislike for laboratory research, he founded the first psychological laboratory in America, and he tried to ensure that psychology would continue as an empirical science by turning his laboratory over to Munsterberg when he left the field to pursue his philosophical interests. He continued, throughout his career, to emphasize the importance of physiological investigation, and his philosophy is built on the foundations of his psychology.

James' subjectivism was a major point of contention with many of his contemporaries living as they did in an era that set a high premium on scientific objectivity. Moreover, his lapses into rationalism prevented him from developing an acceptable account of scientific knowledge. He was inclined to insist throughout his careeer that concepts were static, eternal constructs and he thereby created an epistemological gulf between the perceptual and conceptual faculties. At the same time, his insistence that metaphysical concepts could be translated into particular ideas of specific actions so that the truth of metaphysical or ethical postulates could be determined by their consequenses was compromised by the problem of whether the translations could legitimately be made in the first place and by James' tendency to make value judgements on what the consequences of holding certain postulates would be.[20] He was, however, eventually to conclude that the pragmatic

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20. James' insistence that believing in theism would result in (contd.)

method could not achieve what he had hoped for it in the way of resolving metaphysical issues, and towards the end of his life, James was inclining once more towards more conventional modes of investigation.

Moreover, James' attempt to go beyond dualism did not succeed. This in itself is not a failing that James can be taken to task for: the mind-body, subject-object distinctions seem to be problems that are 'built-in' to the western philosophical tradition and whether the problems admit of solution or not is still a moot point. While James' attempt enabled him to derive new conceptions of the physical universe, the fact that his derivations were coloured by his concept of 'pure experience' and by his attempt to resolve the mind-body problem caused some of his contemporaries to ignore the productive strand in radical empiricism and to concentrate instead on its problems.

Finally, James' commitment to metaphysical and moral problems, his concentration of the validity of human experience, and the 'popular' nature of the bulk of his philosophy placed him somewhat outside of the growing tendency towards "establishing paradigmatic modes of thinking" as a part of the growth of "professionalization" (Kuklick, 1977, p. 451). Philosophers were becoming academics, ensconced in the internal technical problems of the discipline, and they were disinclined to ensure that their philosophy had relevance for the general public.

Science in general was committed to empirical experimentation. A positivistic attitude, defining the methodological scope of science, was becoming widespread. The eventual successes of quantum mechanics and the emergence of relativity theory, and on the psychological front,

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20. (contd.) 'good' consequences is a clear example of this tendency.

the concentration on discovering the laws of learning, on behaviour, and on controlled experimentation (epitomized by Thorndike's early work), meant that science was going to be at the forefront in determining the specific 'givens' of the emerging world-view. The use of the introspective method in American psychology was on its way out long before Watson published his behaviourist manifesto (Watson, 1913).

But it can be argued that James and his contemporaries had a far greater role in the creation of the new world-view than did the psychologists and philosophers who followed them, and that the changes the early pragmatists made in deriving a new set of common assumptions had an immediate and continuous relevance for social science and for philosophy. Our long excursion into mid-nineteenth century psychology and philosophy was undertaken for the purpose of showing how men conceived of the mind and its relation to the physical world in the period 'surrounding' the publication of Darwin's Origin. The contrasts between the assumptions which described that relationship and the assumptions which emerge in the early pragmatist writings are dramatic. We have emphasized throughout that James and the other early pragmatists changed the focus of empiricism through the selection of evolutionary postulates to describe both the structure of mind and the structure of the physical world and the relationship between them. It was the selective drawing out of a new set of assumptions that gives James and his contemporaries their central place in the history of western thought. That their task was by no means an obvious or an easy one is exemplified by the disputes between them, by the problems that remain unresolved in their works, and by the fact that their theories were slowly built up over several decades. James had completed the construction of his evolutionary theory of consciousness by 1890; it was another twenty years before he had the confidence to state that the physical world

was actually governed by the same temporal mutable factors, without indulging in either romanticism or idealism.

Finally, if the early pragmatists and functionalists did not achieve all of the goals they set for themselves, interest in their works has been sustained throughout the twentieth century. Critical interest in the writings of James, Royce, and Dewey has been consistently maintained, and the reputation of Charles Peirce has steadily increased over the past six decades. More recently, critical interest has been evinced in the works of Baldwin, Hall, and Cattell (see for example, Russell, 1978). Perhaps the only real test of the importance of any thinker lies in whether his works continue to excite new commentaries and criticisms: if so, James' reputation for this century at least has long been assured. The hypothesis has been put forward in this thesis that James' greatness lies in the fact that he had a significant role in changing the way men thought about themselves and about the nature of the physical world. Whitehead gives a good description of the difficulties that confront the historian who attempts to discover the assumptions which act as the foundations for the philosophies of any given era and thereby implicitly shows the problems that await any thinker who attempts to move out of the tradition he has inherited in order to build a new one:

> When you are criticizing the philosophy of an epoch, do not chiefly direct your attention to those intellectual positions which its exponents feel it necessary explicitly to defend. There will be some fundamental assumptions which adherents of all the variant systems within the epoch unconsciously presuppose. Such assumptions appear so obvious that people do not know what they are assuming because no other way of putting things has ever occurred to them. With these assumptions a certain limited number of types of philosophic systems are possible, and this group of systems constitutes the philosophy of the epoch (Whitehead, 1925/1948, p. 71).

James' greatness lies in the fact that he succeeded in isolating

the important aasumptions of the rationalist-empiricist tradition and treating these assumptions as relative guidelines rather than as absolutes. And he then went on to construct alternative systems, based on the new set of assumptions which he generated out of evolutionary theory and Renouvier's philosophy. His reading of evolutionary theory led him to isolate certain ideas which were implicitly given within the theory itself but which had been left undeveloped by Darwin and the first generation of evolutionists in their attempt to align the new biology with the Newtonian world-view. It was James' highly selective reading of evolutionary theory which allowed him to generate a new set of assumptions and to question the traditional set of assumptions, for if the new set of assumptions was implicitly given in evolutionary theory as Darwin proposed it, it is certain that Darwin and the first generation of evolutionists remained unaware of the potential implications of these assumptions or perhaps even of their existence as such. That is to say, the generation of the new set of assumptions depended on the particular selection of the early pragmatists--certain ideas were taken up from the theory (while others were ignored) and these ideas were then developed along particular lines. Once the assumptions were partially developed, James could then go on to argue that consciousness need not necessarily be analyzed in the elementaristic, mechanical terms of the previous era, and he could then construct the stream of consciousness as an alternative. His whole psychology and philosophy can be seen as a reexamination of the assumptions of the previous era and an attempt to reconstruct philosophy and psychology along new lines. Thus his legacy is a three-fold one. He showed in practice (if not in a philosophical analysis per se) that psychologies and philosophies had been based on a particular set of

assumptions, and he drew up a new set of assumptions to act as the framework for scientific and philosophical study. He then went on to develop particular psychological and philosophical theories based on these assumptions.

That such an undertaking presents tremendous difficulties is exemplified by the problems that exist in James' psychology and philosophy; the analysis of these problems therefore has something to say about the difficulties that ensue when men try to free themselves from a particular set of assumptions which describe a universal world-view and to construct new assumptions, and with the construction of new assumptions, a new world-view. The analysis in this thesis was therefore undertaken with the aim of showing something about the ways in which new assumptions are derived, old assumptions dismantled, and new epistemologies and metaphysics conceived. This type of analysis involves a teasing out of the assumptions of the older world-view and the research paradigms and empirical observations that maintain and support these assumptions. It also involves an analysis of the factors which incite men to re-examine the assumptions which guide their philosophical and scientific endeavours--in this case, evolutionary theory and the problems it presented. Finally, it involves an analysis of how new sets of assumptions are constructed, how these new assumptions are used to construct particular philosophical and scientific theories, and how these particular theories lead to the collection of 'new' empirical 'facts'. The psychology and philosophy of William James provide an excellent vehicle for such an undertaking.

If the foregoing analysis has often been highly critical of James' psychological and philosophical theories, it is important to emphasize that any analysis of how common assumptions change from era to era cannot be undertaken without a fairly extensive and often critical

examination of how successfully the older assumptions are refuted and how 'satisfactory' the new constructions are in meeting the demands of the new set of assumptions, explaining the phenomena that the older theories purported to explain, and in standing up in their own right as a set of logical theoretical statements which are consistent with observational data. That James' psychology and philosophy can be subjected to such an analysis and still stand as one of the outstanding and momentous achievements of the modern age is testimony enough to its continuing value for modern thought. It is perhaps significant that those theorists who subject James' thought to the most rigorous and critical analysis feel compelled to end their commentaries with sincere expressions of admiration for James' achievements. Kuklick titles his concluding remarks on James' philosophy "Tribute" (see Kuklick, 1977, p. 334), and Wilshire writes:

> William James's Principles of Psychology raises more problems than it solves. But to raise a problem can be a contribution, and in this sense, as well as in others, I believe that James's work makes a major contribution to philosophy of mind and to the culture generally. Even his errors are important because they arise in connection with important problems and provoke new thought about them. As James Joyce once put it, the mistakes of genius are the portals of discovery. One commentator has said that James was a noteworthy psychologist but "was [as a philosopher] at best little more than a brilliant and slightly irresponsible amateur." While I recognize that James was loose in his use of certain philosophical terms, I could not disagree more with the main point of the allegation. I believe that it is only because he is an important philosopher that his work in psychology is still noteworthy and timely today. For the philosophical problems that his work raises pertain to the philosophical foundations of psychology, and, as Wittgenstein and others have indicated, it is here, in its philosophical foundations, that psychology requires the most urgent attention (Wilshire, 1968, pp. 215-216).

The present author is no exception in wishing to pay tribute to James' tremendous achievements and the following statement by Kuklick seems to best sum up what the modern world owes to James and the other early pragmatists. Kuklick writes:

> Medieval thinkers accepted a common network of assumptions and worked diligently within them. What gave the Golden Age its character was that it had to create a new network to assimilate Darwinian science. Those who came after Royce and James were simply working in that network (Kuklick, 1977, p. 451).

This then, was James' achievement: he had a vital part in building the framework for the new age and if his specific theories are no longer used as models for psychology, if philosophy has rejected or modified some of the essential contentions of his pragmatism, radical empiricism, and pluralism, he was still successful in achieving the most important part of his goal. He had a voice in determining the guidelines for a new era: he asked the right questions at the right time in history, and therein lies his continuing importance for our age.

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APPENDIX

1. Mackenzie, S. L. William James and the problem of interests. Journal of the History of the Behavioral Sciences, 1980, 16, 175-185.

2. Mackenzie, B. D., & Mackenzie, S. L. The case for a revised systematic approach to the history of psychology. Journal of the History of the Behavioral Sciences, 1974, 10, 324-347.

WILLIAM JAMES AND THE PROBLEM OF INTERESTS

Lynne Mackenzie

William James attempted to refute automaton theory with the claim that consciousness is efficacious because it is selective, and selective because it possesses many varied and irreducible interests. But James' theory contains several major weaknesses. James never satisfactorily defines the interests in terms of their psychogenetic origins not does he give them an explicit structure within consciousness itself. Therefore the evidence for the existence of interests may be no more than an empirical abstraction from the fact that any particular action is performed. From another viewpoint, the organism may behave as if it were interested but the interests themselves may have only an epiphenomenal status as mere 'attachments' to a biologically determined organism, as part of the consciousness of conscious automata. The weakness of James' interest theory is important as an early example of the same flaw that occurs in many of his later and more systematic theories.

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WILLIAM JAMES AND THE PROBLEM OF INTERESTS*

William James, 1842-1910, began his scientific and philosophical career when the evolutionary debate was still raging. In 1865 James joined Agassiz's expedition to Brazil; his enthusiasm for the new biology had convinced him that his future might lie in the biological sciences. The Brazilian expedition showed him that he was temperamentally unsuited to a career as a biologist, and that any contribution he could make to the extension and development of evolutionary theory would not be in the natural sciences themselves, but in psychology and philosophy.[1] This paper will discuss the first major outcome of that realization--that is, James' first attempt to develop a psychology based upon evolutionary principles. More specifically, it will discuss his attempt to establish, within an evolutionary context, that consciousness is efficacious because it is 'interested' and therefore selective.

The great evolutionists, Spencer and Darwin, retained an Associationist paradigm of mind, and sought--Spencer particularly--to integrate their evolutionary ideas with the existing empiricist philosophy. The dominant result of this attempt at integration was automaton theory, wherein consciousness becomes an epiphenomenon, observant but non-directive. In this model, 'consciousness' is the result of brain-cell interaction: it is a product and supervenes physiological functioning, but does not intervene to produce behaviour on its own. The automaton theory, as put forth by Hodgson, Maudsley, Clarke, Tyndall, Spalding, Clifford and Huxley, was the most specific way in which the traditional empiricist view of a passive consciousness found its new expression. And in his analysis of the automaton position James also criticized Bain, Spencer, and Carpenter for advocating the passive consciousness view.[2]

Originally James aligned himself with the declared automatists. In 1869 his scientific studies led him to conclude "that we are Nature through and through, that we are wholly conditioned, that not a wiggle of our will happens save as the result of physical laws".[3] But James straddled two intellectual worlds: the modern world of Darwinian science, and the traditional world of Unitarian philosophy. He had imbibed enough of a religious or spiritual approach to philosophy from his father, Henry James Sr., to make a materialist orientation towards consciousness tenable for long.

James' neurasthenic ills of 1869 were at least partially caused by his philosophical dilemma. Rescue came in the form of Charles Renouvier, a leading neo-Kantian philosopher, who insisted that knowledge gained through empirical methods was often inadequate for the resolution of moral issues because absolute empirical knowledge was by definition restricted to moments spent in the presence of particular facts. Belief, on the other hand, 'happened' solely through an act of will, and was not only justified, but demanded by moral circumstances when logic and experience failed to provide all of the 'data' necessary to make a decision.[4] James was convinced by Renouvier that in some cases at least, consciousness had an active role to play, and in 1870 he wrote:

> I think that yesterday was a crisis in my life. I finished the first part of Renouvier's second Essais and see no reason why his definition of free will -- "the sustaining of a thought because I choose to when I might have other thoughts" -- need be the definition of an illusion. ...My first act of free will shall be to believe in free will.[5]

James now had philosophical grounds for rejecting automaton theory, and soon he would declare that survival was no longer a mere hypothesis: survival was guaranteed by the possession of an active, functional conscious-

ness.[6] James realized that simply superimposing Renouvier's doctrine of free will onto Darwinian concepts of survival could not guarantee an efficacious consciousness. Instead, he began to work out the structure of a functional psychology, based on the interaction between mind and nature. Knox shows how closely the new psychology was modelled on Darwinian principles:

> Since the environment to which an organism consciously reacts is the environment as it exists for that organism's consciousness, and since the environment as so viewed is the product of selective elimination on the part of the consciousness concerned, it follows that conscious selection creates the known world in precisely the same sense in which 'natural selection' creates the species. "Each of us literally chooses, by his way of attending to things, what sort of universe he shall appear to himself to inhabit."[7]

Darwinian evolution is based upon selectivity in the environment: the well-adapted or best fitted to their surroundings survive and the lesser so perish, and James expanded this idea into the psychological conception of a selective, active mind. This extension of Darwinian principles gave James an alternative to automaton theory while allowing him to retain a naturalistic, neurophysiological structure for conscious activity. Interests, as the means of conscious selection, are first mentioned in James' 1878 article "Remarks on Spencer's Definition of Mind as Correspondence".

James opens his argument by insisting that to be meaningful, Spencer's formula that life, including mental evolution, consists of the 'adjustment of inner to outer relations' must be rewritten to distinguish between 'mental action' per se and 'right mental action'. This redefinition:

> is frankly teleological. It explicitly postulates a distinction between mental action pure and simple, and right mental action; and furthermore, it proposes, as criteria of this latter,

> certain ideal ends--those of physical prosperity or survival, which are pure subjective interests on the animal's part, brought with it upon the scene and corresponding to no relation already there. No mental action is right or intelligent which fails to fit this standard.[8]

He then adds that "These interests are the real a priori element in cognition."[9] A fairly logical criticism of Spencer's position follows, as James shows that an interested consciousness is necessary for the particular survival and adjustment of any individual, and he arrives at the conclusion that:

> I, for my part, cannot escape the consideration forced upon me at every turn, that the knower is not simply a mirror floating with no foot-hold anywhere, and passively reflecting an order that he comes upon and finds simply existing. The knower is an actor, and co-efficient of the truth on one side, whilst on the other he registers the truth which he helps create. Mental interests, hypotheses, postulates, so far as they are bases for human action--action which to a great extent transforms the world--help to make the truth which they declare. In other words, there belongs to mind, from its birth upward, a spontaneity, a vote. It is in the game, and not a mere looker-on; and its judgments of the should-be, its ideals, cannot be peeled off from the body of the cogitandum as if they were excrescences, or meant, at most, survival.[10]

This passage typifies James' early writings on the active, participating consciousness, itself determined by its interests and hence determining the known world. The passage is lyrical, inspirational, and convincing. But James is convincing only on aesthetic grounds. No substantial analysis or definition is given and a fuller, more dynamic causal account is essential: how are interests determined, and once determined, how do they dominate the

stream of thought? James appears to feel that he has provided an adequate account of the interests, for in 1879, in his paper "Are We Automata?" he again uses the idea of interests as a means of justifying his contention that consciousness is efficacious, and refers the reader to his 1878 paper as follows:

> I have treated this matter of teleology being an exclusively conscious function more at length in an article on "Spencer's Definition of Mind" ...to which I take the liberty of referring the reader.[11]

That he is satisfied with the account of interest given in 1878 seems clear when we examine the usage of the concept in the remainder of his "Are We Automata?" where interests are used to account for the selection of activities:

> We have found that the unaided action of the cerebral hemispheres would probably be random and capricious; that the nerve-process likely to lead to the animal's interests would not necessarily predominate at a given moment. On the other hand, we have found that an impartial consciousness is a non-entity, and that of the many items that ever occupy our mental stage Feeling always selects one as most congruous with the interests it has taken its stand upon. Collating these two results, an inference is unavoidable. The "items" on the mental stage are the subjective aspects of as many nerve-processes, and in emphasising the representations congruous with conscious interest and discouraging all others, may not Attention actually reinforce and inhibit the nerve-processes to which the representations severally correspond?[12]

That some kind of a mechanism is required to account for purposive behaviour is clear enough: the automatists and 'determinists' themselves

had developed detailed systems to explain the behavioural repertoires of men and animals. The question is whether or not James' concept of interest is sufficiently developed to support his conclusion that consciousness is efficacious. In James' "Are We Automata?" interests account for the selections we make, and James tries to explain divergent pieces of behaviour solely in terms of the presence of divergent interests. That is, if A performs action C, and B does not, the difference is ascribed to a difference in interests.[13]

The idea that selection is dependent upon the possession of discrete interests is carried over into The Principles of Psychology (hereafter refered to as the Principles):

> These aesthetic and practical interests, then, are the weightiest factors in making particular ingredients stand out in high relief. What they lay their accent on, that we notice: but what they are in themselves, we cannot say. We must content ourselves here with simply accepting them as irreducible ultimate factors in determining the way our knowledge grows.[14]

This statement is both radical and unsatisfactory: James is charging that all selections are made in accordance with factors which cannot be defined or explained. Interests, because of their 'mysterious' nature are exempted from the type of empirical study which is to be applied to all other aspects of the conscious process. Nevertheless, James of course does not end his discussion of interests with the statement quoted above, and goes on to discuss the role played by the interests in co-ordinating conscious activity.

James indicates in the Principles that interests first arise with the primitive feelings--those basic 'raw sensations' which later develop into conceptually 'meaningful' ideas and extend to incorporate our practical, aesthetic, intellectual, emotional, volitional, and ethical lives:

> Man, by his immensely varied instincts, practical wants, and aesthetic feelings, to which every sense contributes, would be sure to dissociate vastly more characters than any other animal; ... The diverse interests lead, too, to a diversification of experiences, whose accumulation becomes a condition for the play of that law of dissociation by varying concomitants.[15]

Interests as they first appear occupy the same dynamic place in consciousness as instinctive impulses. Interests must originally be spontaneously aroused with instincts, at least insofar as the individual experiences certain feelings (for example, hunger), which prompt certain instinctive responses (for example, sucking and biting on presentation of food). The feeling of hunger must contain an implicit interest in having the feeling satisfied; and this interest, coerced by the physical needs, becomes attached to the particular objects in the external world which satisfy the need. An interest therefore eventually encompasses internal sensations or feelings, and the particular objects in the external world which correspond to internal sensations. As conceptualization develops, our interests develop and lead us into a greater range of experience. We 'get' more, or 'know' more about the world because our varied interests lead us to dissociate more and more particulars out of objects than the first instinctive associations yield. Our interests thereby determine what we will experience; they determine which objects will be separated as worthy of our attention. As James writes:

> My experience is what I agree to attend to. Only those items which I notice shape my mind--without selective interest, experience is an utter chaos. Interest alone gives accent and emphasis, light and shade, background and foreground--intelligible perspective, in a word.[16]

The role of interests as determinants of what we shall agree to

attend to in potential experience is a consistent strand in the Principles. Our interests determine which object shall be chosen at any level as the most 'significant', 'satisfying', or 'true'. An object, theory, relation, or event must be satisfactory in two ways: it must satisfy the demands of the situation--for example, food in the case of hunger, explanation in the case of scientific investigation, and it must appeal to the related needs extant in the stream of consciousness at any given time. Thus, an object is interesting, and therefore 'selected' not only because it has the particular properties sufficient to satisfy the particular need, but because it possesses, in addition, properties that appeal to co-existing needs, or interests:

> It is conceivable that several rival theories should equally well include the actual order of our sensations in their scheme, much as the one-fluid and two-fluid theories of electricity formulated all the common electrical phenomena equally well. The sciences are full of these alternatives. Which theory is then to be believed? That theory will be most generally believed which, besides offering us objects able to account for our sensible experience, also offers those which are most interesting, those which appeal most urgently to our aesthetic, emotional, and active needs. So here, in the higher intellectual life, the same selection among general conceptions goes on which went on among the sensations themselves.[17]

Unfortunately, this is about as far as James goes in defining interests and their role in conscious selection, so that interests appear to be simple additions to the other feelings, ideas, or thoughts that make up the stream of consciousness. Because James contends that the interests must simply be accepted as irreducible factors which determine the growth of knowledge and therefore defines the interests solely in terms of their relations to other feelings, it is difficult to decide whether their 'exist-

ence' provides the basis for an adequate refutation of automaton theory.

If Knox's parallel between selective Nature and selective mind is truly applicable as a description of James' epistemology then it must be added that the mind, in making its initial separations of reality, is at least at the onset, no more consciously selective than Nature. And if the initial selections are made more or less randomly, or are determined by instinctive demands and responses, we are then compelled to assess the influences of these selections upon subsequent ones. James' account of the structures of action is strongly deterministic, in deliberate contrast to his assertion that free will may obtain in special circumstances. The worlds of freedom and the worlds of mundane reality clash in the demands they make upon the individual. This conflict emphasizes the importance of the status of the interests when we ask to what degree we actually create our own reality, and to what degree that reality is imposed on us both from within and from without.

At this stage the case for James' voluntarism rests solely on the accidental results of possessing an interactive mind. Interests, as they initially accompany instincts, can have no more foresight of ends than the instincts themselves. If the instinct is blind, and the individual incapable of cognizing ends until experience substitutes other patterns of conscious interaction, then interests must be correspondingly blind at the onset. James' conception of an efficacious consciousness is based on the possession of interests and on the resulting development of unique perceptual and conceptual schemas of reality; it relies on the fortuitous possession of discrete interests, rather than upon a consciously directed structuring of experience.

The problems that arise from James' failure to give an adequate teleological account of the interests become more explicit when we look at his dualistic model of psychogenesis. This theory proposes that the mind

is assailed in two ways: the first means is through the 'front-door' of sensory experiences and includes those experiences gained through active interaction with the environment. 'Back-door' influences are comprised of the indirect causes of mental modification: molecular accidents, and other random variations in the unstable brain-tissue. These influences are responsible for our moral, aesthetic, and intellectual experiences, while 'front-door' propensities facilitate our comfortable adjustment in the external world.[18] At the same time, the 'back-door' propensities are irrelevant to biological adjustment, and may actually be opposed to comfortable adjustment. The final consciousness is a product of these separate, independent, and sometimes antithetical types of tendencies; the individual's interests therefore must originate in both of the two evolutionarily derived patterns of development.

That James intended the interests to be taken as the "irreducible teleological factors of consciousness"[19] is confirmed by R. B. Perry. He reminds us that James rewrote Spencer's formula to read: "Right or intelligent mental action consists in the establishment, corresponding to outward relations, of such inward relations and reactions as will favour the survival of the thinker, or at least, his physical well-being."[20] Later, Perry argues that "morality is selective from among interests"[21] but he does not provide any insight into how the problem of conflicting interests is to be resolved; in this case, the presence of <u>particular</u> moral or instinctive interests can only be inferred after the fact of any particular action.

While Perry cannot really be criticized for not dealing with the problem, it is perhaps significant that he does not see the interest theory as problematic. In fact he sees it as one of James' most positive achievements.[22] He appears to be satisfied that James has dealt satisfactorily with the problem by recognizing that there <u>is</u> a problem in deciding which interest will prove predominant. For James himself wrote:

> The standard of survival or self-preservation is most potent. But there exists a host of other standards, aesthetic and moral, imperative so long as they do not conflict with this one and sometimes imperative over this one. In the preliminary selection by the senses of certain objective orders of movement, it is difficult to see what standard is subserved.[23]

James concludes that the enactment of any particular interest depends upon the individual's ability to apply the 'right' or 'desired' interests in appropriate situations; this ability depends upon selecting the correct concept of the situation and acting accordingly.[24] But this does little to resolve the problem of how the two types of interests are related to one another, or how interests influence sophisticated problem solving at all. Once again, the concept of interest proves elusive. Instead, we soon find ourselves looking towards James' extensive analysis of the development of perception and conception to discover the 'mental' basis for selection. And this means that the analysis of perception and conception is confounded: if we accept James' notion that interests are the teleological basis of consciousness, then the particular development of perceptual and conceptual capacities must be assumed to be at least partially dependent upon the play between interests.

James makes a distinction between those interests which facilitate adjustment and those which appear to be "without any utility at all."[25] Those interests without utility, however, include such tendencies as a liking for alcohol or music, and such interests would obviously have a strong influence on the development of the individual's perceptual and conceptual structures. Interests, in this case, serve as the impulsive and distinguishing characteristics of personality. The only restriction James places upon the efficacy of interests at this point are those imposed by 'natural selection'

which eliminates those tendencies which would imperil the individual's survival or that of his species.[26] The problem with this is that there is no further analysis of the mechanism of natural selection itself, or on how it works to 'weed out' harmful tendencies. The recognition that too much alcohol is harmful to the individual who has a strong 'interest' in it, comes about through the individual's conceptualization of his situation.[27] Individually, if not for the race, it is difficult to see how natural selection is an operative mechanism here. All that James finally claims regarding natural selection is that, numerically, the instinctive interests outweight the 'fortuitous' interests.[28] Thus, the relation of interests to perceptual and conceptual development is not satisfactorily resolved.

Furthermore, we cannot conclude that interests are simply synonomous with feelings or ideas, because James states in the Principles that interests 'distinguish' particular thoughts within the stream of consciousness. It is the interest attached to the thought, idea, or conclusion, that makes it significant:

> In either case it [the conclusion] stands out from the other segments of the stream by reason of the peculiar interest attaching to it. This interest arrests it, makes a sort of crisis of it when it comes, induces attention upon it and makes us treat it in a substantive way.[29]

James limits any further discussion of differentiation of interests to their function. As parts of the structure of consciousness (insofar as anything meaningful can be said about the structure of interests), the interests do not appear to be differentiated. That is, they operate consistently in relation to the rest of the conscious process. James indeed confirms this: he uses the terms interest and instinct interchangeably in describing the distinction between the 'egoistic self' and the rest of the world and writes that

sympathetic and egoistic instincts appear to arise "on the same psychologic level."[30] The 'back-door', 'front-door' distinction is a functional distinction: interests can be functionally distinguished because they facilitate conflicting forms of behaviour. While James makes the 'front-door' and 'back-door' distinction on the basis of how the interests form a part of consciousness in the first place, there is nothing in his work to indicate that they can be physiologically distinguished once they are there. Nor, in psychological terms, is there anything in his writing to suggest that 'front-door' and 'back-door' interests act differentially on the stream of consciousness itself.

If the interests provide the selective 'force' of consciousness then some definition of their impulsive power is necessary. James' theory of instinct is plastic and dynamic in the sense that conflicting instincts may be aroused by the same stimulus. The instincts are painstakingly enumerated and described, and the dynamics of internal and external factors which determine their differential arousal are largely accounted for.[31] If interests are to achieve a similar status, they must be differentiated from instincts per se. Similarly, they must be distinguished from the impulsive characteristics of the cognitive ideas and feelings as well if they are to come into their own as real selective mechanisms. Otherwise, they can only be considered as abstractions from past activities. The other alternative is to take the term 'interest' in a purely adjectival sense and use it to distinguish the impulsive, and non-impulsive, mental states from an introspective point of view. At times James appears to lapse into this type of usage: "If one must have a single name for the condition upon which the impulsive and inhibitive quality of objects depends, one had better call it their interest."[32] But what, then, happens to the idea of interests as the teleological basis of consciousness?

James uses the concept of interest to account for sophisticated

selections, but there is no adequate connection of the 'back-door' propensities with the specific selections made. In the example above,[33] of the choice between two theories which provide equally comprehensive and rational explanations for a given phenomena, James fails to give an explanation of how the interests develop along with the cognitive capacities so that they can give the necessary 'push' to conscious selection. There is a substantial gap between the initial propensity and the sophisticated interest that provokes the final selection.

To sum up, interests are described as the basic teleological units of consciousness in some parts of James' work; in others, they are confounded with instincts or other feelings or ideas. They are similarly used to describe adaptation (through instinct) and the 'accidental' activities or predispositions of individuals, so that 'interest' is said to account for sophisticated 'conceptual' selections. The term is also used in a descriptive, or introspective sense, where 'interest' simply means 'selection'. Finally, interests are 'attached' to ideas in the stream of thought.

The case for an efficacious consciousness is substantially weakened if we try to use interests, as James and Perry suggest, as the teleological basis for consciousness, because it is too easy to see the interests as epiphenomena--that is, as products of, or extrapolations from, past behaviour, or as mere descriptions of conscious states. The dualistic nature of the interests relates to the problem of the possible epiphenomenal status of the interests because it intensifies the dilemma of how any particular interest acts to propel any particular conscious selection.

It can be seen, therefore, that interests as James defined them do not provide an adequate refutation to automaton theory. It is consistent with James' description, although not with his intent, for interests themselves to be epiphenomena. The concept of interests has always been open

to the potential criticism that the evidence for their existence is no more than an empirical abstraction from activity. Nature selects; the organism defined by a mechanistic theory may behave as if it selects, may feel as if it selects, as if it were interested, but the appearance of an interest need not imply that the interest is causally efficacious. Survival 'happens' and we may say, after the fact, that the individual had a conscious interest in surviving that ensured his particular survival. But the particulars of consciousness cannot be abstracted from behaviour or feeling alone; the specific genesis and operations of the interests must be delineated if we are to accept the concept as determinative in the way James intended.[34] The conclusion that 'mysterious', 'underlying', teleological units account for specific behaviours is not a sufficiently credible explanation, given James' commitment to naturalistic explanations.

When he set up the terms of his conception of consciousness, James recognized that "We ought to have some general term by which to designate all states of consciousness merely as such and apart from their particular quality or cognitive function."[35] The terms he selected were feeling and thought.[36] We have already shown that James did not include the interests as types of feelings or thoughts. Thus, all that we can conclude is that James did not consistently intend to use the hypothesis as an integral part of his psychology, and this conclusion would correlate with his contention that the interests are 'mysterious'. In placing positivistic limitations on what psychology was to include he wrote: "Psychology, the science of finite individual minds, assumes as its data (1) <u>thoughts and feelings</u>, and (2) <u>a physical world</u> in time and space with which they coexist and which (3) <u>they know</u>."[37] Interests are excluded, and insofar as they cannot be embodied in feelings and thoughts (apart from their role in the 'fringe' of the stream of consciousness), would seem even to be precluded.

In his later writings, James reverts again and again to renewed discussion of the nature of percepts and concepts as the fundamental units of the developing consciousness interacting with the world, without any separate reference to interests.[38] We can conclude, then, that James ceased to give expression to the doctrine that interests are the fundamental units of conscious selection, underlying the feelings themselves, after the Principles.

So what function was served by the interest hypothesis and why do we need to look at it at all? The theory of interests, as a basis to found a psychology on, was unsuccessful--indeed, it is doubtful that James long intended to do so anyway. But the doctrine itself, and the reasons that it was unsuccessful, are of great importance in coming to an overall assessment of James' thought. The problems with interests and their dualistic basis recur on a grander scale in James' delineation of the more systematically defined mental faculties such as belief, reasoning, and volition. In each case consciousness can be seen structurally as a hierarchical, unified system, while operationally, the dualism is apparent in the opposing functions of each faculty. The structural unity of consciousness is maintained by the vehicle of the stream of consciousness so that each idea carries its own impetus for action. At the same time, whether any idea will actually be enacted depends upon the function fulfilled by the particular idea in facilitating the individual's adjustment to the external world, or correspondingly, in facilitating his attempts to 'transcend' that world, through the implementation of novel ideas or acts of will.[39]

An analysis of James' interest hypothesis is valuable in this context because the available material is extremely limited: the interest theory can thus represent a microcosm within the macrocosm of James' system. The problems that arise in the analysis of the theory of interests reappear in James' broader, more systematic psychology and philosophy. The difficulties

encountered in attempting to determine the relationship of the interests to the rest of conscious activity are repeated when we come to consider the relationships between the various mental 'faculties' within the stream of thought, and to try to determine how one particular idea is chosen for enactment against competing ideas. The weaknesses in the theory of interests can thus serve as a key to understanding much of James' more systematic work, and the analysis of these weaknesses may help to determine a methodology for examining the whole corpus of his thought.

James' philosophy is built upon the various strands of his psychology. The world he creates is a particularly 'humanistic' world; pragmatism and radical empiricism take their shape from James' conception of consciousness. Therefore an understanding of James' psychology and his first attempts to work out a context for that psychology[40] are basic to any analysis of the later philosophy.

And if the doctrine that consciousness is efficacious because it is interested was problematical, 'intuitive', 'unscientific', and ontologically 'mysterious'--perhaps to such an extent that James himself failed to expand it and make it an integral part of his psychology--it was productive as well. James explicitly developed the doctrine as a rebuttal to Spencer and the declared automatists;[41] if he was to develop a concept of consciousness that was both efficacious and freed of the limits of psychological hedonism, it was still necessary for him to find some means of expressing his viewpoint in a way that was compatible with Darwinian theory and current neurophysiology. James' problem was to find some means of describing consciousness as fundamentally and intrinsically efficacious. The idea that consciousness was <u>interested</u> served the initial purpose of giving James a means of polemicizing against automaton theory. At the same time, it focused his work on the fundamental units of consciousness, so that he

was able to go on to develop a broad psychological theory where consciousness was fundamentally efficacious and where habit formation was a product of the first purposive interactions of the individual with the world. Initially, he hoped that the conception of an interested consciousness would ensure that true voluntary action was as 'naturalistic' and pervasive as automatic behaviour. It was not an easy task.

To conclude then, the idea that consciousness is interested, selective, and efficacious, marks James' break with the earlier physiologically deterministic associationist psychology. It is also James' first attempt at a concept of mind which will grow from here, through many transitions, into a psychology and philosophy that will move evolutionary ideas, as we define them today, into philosophy. This perhaps accounts for the interest doctrine's respected place in the literature.[42] The idea that consciousness is interested is the beginning of James' attempt to create a new and comprehensive world-view. Both as the first expression of the concerns that dominated James' mature thought, and as the first example of the flaws that prevented his achieving the synthesis he desired, the importance of the theory of interests cannot be overestimated.

FOOTNOTES

1. See Henry James, ed., The Letters of William James, 2 vols. (New York: Kraus Reprint, 1969, orig. publ. London: Longmans, Green, 1920), 1: 53.

2. See Ralph Barton Perry, The Thought and Character of William James, 2 vols. (Westport, Connecticut: Greenwood, 1974, orig. publ. Boston: Little Brown, 1935), 2: 25, William James, "Are We Automata?" Mind 4 (1879): 1-22 (hereafter cited as "Are We Automata?"), and William James, The Principles of Psychology, 2 vols. (New York: Dover, 1950, orig. publ. New York: Holt, 1890), 1: 113, 130-131, 656-657 (hereafter cited as Principles). It should be noted that only Huxley, Hodgson, Spalding, Tyndall, and Clifford specifically declared themselves as automatists. Bain was concerned with establishing "the nature of the faculty [will] itself, its early germs, or foundations, in the human constitution, and the course of its development," (Alexander Bain, The Emotions and the Will, preface to the first edition, [London: Longmans, Green, 1888, orig. publ. 1859], pp. v-vi.) and believed that he had given a voluntaristic account of human action in physical terms. Carpenter argued against automaton theory and strove to preserve the efficacy of the will in his physiological works; he found himself 'hemmed in' as it were by the discoveries in neurophysiology, evolutionary biology, and spiritualism. (See William Carpenter, Principles of Human Physiology, 5th ed., [London: John Churchill, 1855], pp. 618, 627, 742-743.) Spencer, finally, did not declare himself as an automatist but he did argue that free will was an impossible conception for any scientific psychology. He also concluded that the existence of free will would impede the adjustment of inner to outer relations. (See Herbert Spencer, The Principles of Psychology, 2 vols. [London: Williams and Norgate, 1870], 1: 499, 503.) James' inclusion of Bain, Spencer, and Carpenter with the declared automatists is based on his analysis of their physiological systems; all of

these theories presented systems wherein volition was subjugated to neurophysiological activity so that volition largely served the function of facilitating the development of habit patterns which were then automatically elicited by appropriate stimuli. For a more detailed examination of the relationship between nineteenth century psychology and physiology, see Roger Smith, "On the Human Significance of Victorian Biology," in Nature and the Victorian Imagination, eds., U. C. Knoepflemacher, and G. B. Tennyson (in press); and Robert M. Young, Mind, Brain and Adaptation (Oxford: Clarendon, 1970).

3. Henry James, ed., The Letters of William James, 2 vols. (New York: Kraus Reprint, 1969), 1: 152-153.

4. See Ralph Barton Perry, The Thought and Character of William James, 2 vols. (Westport, Connecticut: Greenwood, 1974), 1: 657. I am following the breakdown Perry gives of Renouvier's philosophy and its specific influence on James. Renouvier's empiricism embraced both the subjective and objective features of any representation, and he insisted on an indeterminist view of the universe. These doctrines find their way into all aspects of James' later philosophy, and though James eventually took issue with parts of Renouvier's philosophy, he never departed from these basic premises.

5. Henry James, ed., The Letters of William James, 2 vols. (New York: Kraus Reprint, 1969), 1: 147.

6. William James, "Remarks on Spencer's Definition of Mind as Correspondence," in William James, Collected Essays and Reviews (London: Longmans, Green, 1920, orig. publ. in the Journal of Speculative Philosophy 12 (1878): 1-18), pp. 64-65, (hereafter cited as "Spencer's Definition"), and Principles, 1: 140-141.

7. Howard V. Knox, The Philosophy of William James (London: Constable, 1914), p. 23. The internal quotation is from the Principles, 1: 424.

8. "Spencer's Definition," p. 50.

9. "Spencer's Definition," p. 50.

10. "Spencer's Definition," p. 67.

11. "Are We Automata?" p. 7. See also "Spencer's Definition," pp. 49-50, for James' specific usuage of the term 'teleological'.

12. "Are We Automata?" p. 14.

13. See ibid., pp. 15, 19. This is an important paper; it contains, in shorter and more hypothetical form, the rationale of James' refutation of automaton theory, and the genesis of his later theories of reasoning and volition. The expanded versions of these ideas were later to appear in the Principles. The remainder of this paper will discuss James' refutation of automatism on the basis that consciousness is efficacious because it is interested, using the Principles as the major reference to show how James extended his earlier theory. The Principles contains James' most developed refutation of the automaton theory; it also contains his last explicit work on the problem of automatism.

14. Principles, 2: 345.

15. Ibid., 2: 345, See also ibid., 2: 344.

16. Ibid., 1: 402.

17. Ibid., 2: 321. James in fact makes use of the 'interests' to provide the structural continuity between the 'sensational' and 'higher' mental lives. The dynamics of selection must remain constant, regardless of the nature of the selected object.

18. See ibid., 2: 627.

19. Ralph Barton Perry, Present Philosophical Tendencies (New York: Longmans, Green, 1916), p. 350. And in The Thought and Character of William James, 2 vols. (Westport, Connecticut: Greenwood, 1974), 2: 76, Ralph Barton Perry wrote: "the teleological interpretation of mind does not contradict either its cognitive or its biological role--it explains them both."

20. Ralph Barton Perry, Present Philosophical Tendencies (New York: Longmans,

Green, 1916), p. 350. See also "Spencer's Definition," p. 49, for James' original statement.

21. Ibid., p. 351.

22. Ibid., pp. 350-351.

23. "Are We Automata?" pp. 18-19.

24. See ibid., p. 20, and Principles, 2: 531, 561-567.

25. Principles, 1: 325.

26. See ibid., 1: 325.

27. See "Are We Automata?" p. 20, and Principles, 2: 565.

28. Principles, 1: 325.

29. Ibid., 1: 260. See also ibid., 2: 558-559.

30. Ibid., 1: 325.

31. See ibid., 2: 383-441.

32. Ibid., 2: 558.

33. See ibid., 2: 321.

34. James claims that when the organism possesses an efficacious consciousness, survival can be certain before the fact. In the Principles, 1: 141, James writes:

> Considered merely physically, all that can be said of them [the reactions] is that if they occur in a certain way survival will as a matter of fact prove to be their incidental consequence. The organs themselves, and all the rest of the physical world, will, however, all the time be quite indifferent to this consequence, and would quite as cheerfully, the circumstances changed, compass the animal's destruction. In a word, survival can enter into a purely physiological discussion only as an hypothesis made by an onlooker about the future. But the moment you bring a consciousness into the midst, survival ceases to be a mere hypothesis. No longer

> is it, "if survival is to occur, then so and so must brain and other organs work." It has now become an imperative decree: "survival shall occur, and therefore organs must so work!" Real ends appear for the first time on the world's stage.

This paper is restricted to the question of whether the interests, as James defines them, give adequate support to statements like the above. It must be noted that it does not attempt to deal with the viability of James' larger and later conception of the efficacious consciousness. Such a task requires extensive analysis of James' theories of perception and conception, to begin with, and is beyond the scope of this paper.

35. Ibid., 1: 185.

36. See ibid., 1: 186.

37. Ibid., 1: vi.

38. See William James, "Conception," "The Perception of Things," "The Perception of Space," and "The Perception of Reality," in Principles, 1: 459-482, 2: 76-133, 134-282, 283-324; William James, The Varieties of Religious Experience (New York: Longmans, Green, 1923, orig. publ. 1902), pp. 53-54; William James, A Pluralistic Universe (Gloucester, Mass.: Peter Smith, 1967, orig. publ. 1909), pp. 143-217, 231-261, 328-330; William James, Essays in Radical Empiricism (Gloucester, Mass.: Peter Smith, 1967, orig. publ. 1912), pp. 11-19, 33, 35, 52-57, 64-86, 158, 196-205; William James, Some Problems of Philosophy (London: Longmans, Green, 1911), pp. 47-112, 166-219; William James, Pragmatism (New York: Longmans, Green, 1913, orig. publ. 1907), pp. 128, 172, 210-211, 244-245; and William James, The Meaning of Truth (New York: Longmans, Green, 1909), pp. 1-50, 63, 100, 104-114. The Meaning of Truth is mostly about cognition; as it was written in response to comments and criticisms James received on the earlier Pragmatism, it is important in the present context that in order to support his philosophy,

he reverted to discussions of how the individual comes to know the world.

39. That such a structure-function dichotomy exists in James' writings is the subject of a rather long thesis. Further support for this mode of analysis will be provided in subsequent papers.

40. See for example, "Spencer's Definition," pp. 43-68; "Are We Automata?" pp. 1-22; William James, "Brute and Human Intellect," Journal of Speculative Philosophy (1878): 236-276; and William James, "The Spatial Quale," Journal of Speculative Philosophy (1879): 64-87.

41. See "Spencer's Definition," pp. 43-68; and "Are We Automata?" pp. 1-22.

42. See George S. Brett, "The Psychology of William James in Relation to Philosophy," in In Commemoration of William James, ed., H. M. Kallen (New York: Columbia University Press, 1942), p. 82; Ralph Barton Perry, Present Philosophical Tendencies (New York: Longmans, Green, 1916), pp. 350-351; Howard V. Knox, The Philosophy of William James (London: Constable, 1914), pp. 14-23; H. S. Thayer, Meaning and Action (New York: Bobbs-Merrill, 1968), p. 143; A. J. Reck, Introduction to William James (Bloomington: Indiana University Press, 1967), p. 27; John K. Roth, Freedom and the Moral Life: The Ethics of William James (Philadelphia: Westminster, 1969), pp. 30-31; John Wild, The Radical Empiricism of William James (Garden City: Doubleday, 1969), pp. 12-20; and P. K. Dooley, Pragmatism as Humanism (Chicago: Nelson-Hall, 1974). Dooley initially questions the validity of James' interest hypothesis (ibid., pp. 8-9), but later allows it to stand as a fundamental part of James' epistemology (ibid., pp. 48-49). The works cited were selected as representative examples of how the interest hypothesis has fared in the literature. While these writers vary in their enthusiasm for the theory of interests (some merely describe the interest hypothesis as part of James' psychology, and others see it as a substantial breakthrough in philosophy), none of them disputes its validity and it therefore stands unchallenged in the literature.

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It has been published as Mackenzie, B. D., Mackenzie, S. L., 1974. The case for a revised systematic approach to the history of psychology, Journal of the history of the behavioral sciences, 1974, 10(3), 324-347